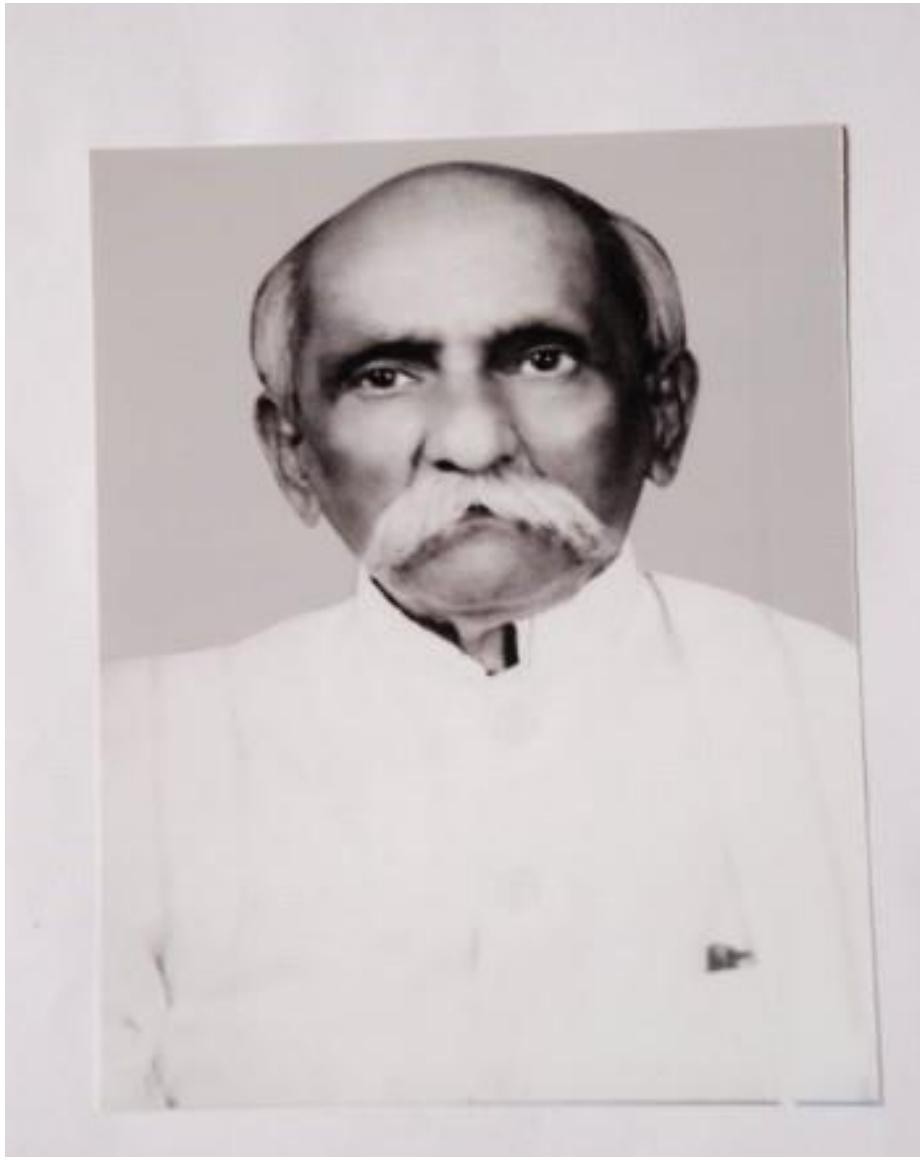


# **The Publications of Prof. Vissa Appa Rao**

## **On Music, Science and Education**



## **CONTENTS**

- 1. Biography of Prof.Vissa Appa Rao**
- 2. Biographic Articles on Prof. Vissa Appa Rao**
- 3. List of Publications**
- 4. List of Articles in English**
- 5. List of Articles in Telugu**
- 6. Articles in English (Complete Text)**
- 7. Articles in Telugu (Complete Text)**
- 8.**

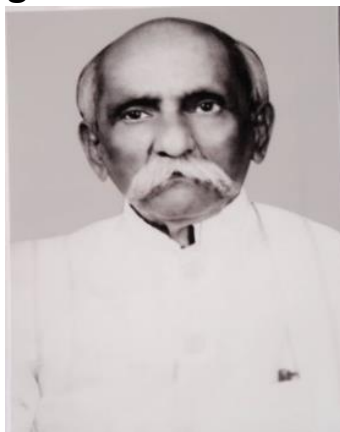


## **1.Biography of Prof.Vissa Appa Rao**

### **1 Prof.Vissa Appa Rao:**

**Prof. Vissa Appa Rao (1884-1966) was an Eminent Educationist and Physicist of South India. He worked as Professor of Physics at the Madras Presidency College (1909-1913) and (1927-1936), Rajahmundry Government Arts College (1914-1919) and (1922-1926) and at the Anantapur Government Arts College (1919-1922). Later on he worked as the Principal of the Rajahmundry Government Arts College and the Teachers College of Education during the years 1936-1938. In 1938 he became the Principal of the Andhra University Colleges at Visakhapatnam and worked there till 1940 when he retired from the Madras Educational Service.**

**He was a classmate of the Nobel Laureate Sir C.V.Raman (1888-1970) at the Madras Presidency College. He was also a contemporary of Prof. Sarvepalli Radhakrishnan (1888-1975) at Madras Presidency College.**



**Prof. Vissa Appa Rao**  
**(24<sup>th</sup> May 1884 – 30<sup>th</sup> June 1966)**

**He was a well-known Musicologist and Founder Member of the Madras Music Academy (1928). He got published a Souvenir in English and Telugu with a Biography of the Saint Composer Tyagaraja Swami (1767-1847 AD) at Chennai. Also he published the complete collection of the saint's Carnatic kritis with philosophical explanations as well some rare kritis with musical notations. He was also a Member of the Advisory Board of Akashvani (AIR) and the Founder Member of the A.P.Sangeeth Natak Academy (1957). Prof. Appa Rao was honoured by the Madras Music Academy in its 3<sup>rd</sup> Annual Conference on 1<sup>st</sup> January 1959. He identified that the Music Composer Kshētrayya (1600-1680 AD) originated from the Muvva Gôpala temple kshētra of Krishna district and got the composer's Padās published. After his Scientific Presentation at the Central Sangeet Natak Academy (September 1958), Kuchipudi Dance system was Recognized Officially as a**

Classical Dance Tradition of India. This Historical Document is available in the Archival Library of the Academy at New Delhi. He was responsible for the establishment of the famous artist Damerla Rama Rao (1897-1925) Memorial Art Gallery and Art School at Rajahmundry.

Prof.Appa Rao was a popular writer of Science books in Telugu. His Publications 'ākāsam' (Astronomy) and 'Paramānu Sakti' (Atomic Energy) won awards from the Central Government and A.P. State Government. The Atomic Energy book was translated into Urdu. His other Publications were 'Vyāsāvali' (Essays on Science, Astrology and Esoteric Subjects) and 'Nritya Sangītha Vyāsa Ratnāvali' (Essays on Classical Dance, Classical Music and Science of Music).

Prof.Appa Rao became a Close friend and Sambandhi of Gurudev Sri Veturi Prabhakara Sastri (1888-1950), an Eminent Telugu Literary Critic, Epigraphist and Orientalist of South India. In the company of Sri Sastri he became an ardent Follower and Practitioner of Bhrikta Rahita Taraka Raja Yoga of Master CVV (1868-1922), Kumbakonam ([www.mastercvv.com](http://www.mastercvv.com)). He recorded Several Case Histories of People Suffering from Chronic and Terminal Diseases being Treated and Cured by Sri Veturi Prabhakara Sastri through the Practice of Master C.V.V. Yoga at Chennai and Tirupati.

## **2. Biographic Articles on Prof. Vissa Appa Rao**

**2.1 Versatile Genius – Sri Vissa Appa Rao by Vissa Lalita**

**2.2 The Unforgettable Great Man: Our Brother-in-law Sri Appa Rao \***  
*By Dr.Veturi Chandrasekhara Sastri*

**2.3 The Citation from Madras Music Academy**

**2.4 Siddha Nagarjunudu: Acharya Vissa Appa Rao (in Telugu) by Dr.Veturi Sankara Sastri**

## 2.1 VERSATILE GENIUS – SRI VISSA APPA RAO \*

By

VISSA LALITA +

In the Souvenir being published in connection with My Revered Father-in-Law Sri Vissa Appa Rao's Centenary Celebrations, I am making this Humble Contribution to Present the Events known to me and seen by me apart from a description of valuable services rendered by him in various fields.

He attracts the attention of everyone. He has a tall personality, fair complexion, always with a smiling face and a nature of affectionate conversation indicating him as an integral person. There used to be a speciality in his dress code. While going to the College, and on special occasions He used to wear a Close Necked Long Coat, 'talapāga' (White Cloth Headgear), 'pancha' (Loin Cloth or 'dhōvatī'), Socks and Shoes. On Special Occasions he used to wear – a short coat, pancha, white shirt and a folded 'uttariyam' (Scarf like Upper Cloth, folded and put on the shoulder). This type of Special appearance was adopted by three well known individual scholars of the Presidency College: Prof. Vissa Appa Rao, Prof. G.S.Sarma and Dr.Sarvepalli Radhakrishnan.



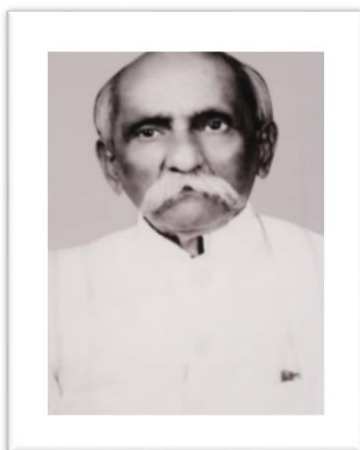
**Prof. Vissa Appa Rao**  
(24<sup>th</sup> May 1884 – 30<sup>th</sup> June 1966)

*\*Translation of Telugu Article: 'బహుముఖ ప్రజ్ఞాశాలి శ్రీ విస్సా అప్పారావు గారు' from "Archana: Proceedings of the Centenary of Vissa Appa Rao, 1984".*

*Translated and Abridged by Vissa Appa Rao (Junior).*

*+ Smt.Vissa Lalita was the Wife of Dr.Vissa Ramachandra Rao and the Eldest Daughter-in-law of Prof. Vissa Appa Rao.*

***[Introductory Note by the Editors of Archana: This Article Explains that “Prof. Appa Rao was having a great Interest and affection in Studying the Developments in Modern Sciences and at the same level He was also having equal Concern and Interest in the Study and Promotion of Ancient Sciences. He used to make a thorough Study of any subject before ascertaining its Validity and accepting it. He was having Both Generosity and Gracefulness. He was having principled values in his life and also a strict disciplinarian in his dealings with people”.]***



**Prof. Vissa Appa Rao**  
(24<sup>th</sup> May1884 – 30<sup>th</sup> June1966)



**Smt. Vissa Lalita**  
(28<sup>th</sup> November1920 – 16<sup>th</sup> September1993)

Sometimes when he was talking he used to be frank and harsh and his words were difficult to bear but in his heart he was having love and affection. He was not appreciating Persons who come in need of help and finance, hiding the matter and talking in an awkward way. On recognising such persons he was scolding them severely. But at the same time he was extending all the help they need before sending them back! He was recognising worthy issues in the society and sparing no efforts in the promotion of worthy and talented persons and institutions. *He was also extending financial help for the*

*publication of ancient musical literature. He extended help in the Resurrection of ancient dance form Kuchipudi, astronomy, calendar reform based on ancient Panchanga Systems, Jyotish Sastra and Predictions, Arts and Painting, He wrote many articles, and published many books. Many of his articles, radio talks, and addresses at many organisations were compiled and published as 'vyāsāvali' (వ్యాసావళి) Books.*

#### Family Traditions in Classical Music:

Along with the Developments in Physical sciences he was equally interested in the Classical Music of South India. While working as a *Professor of Physics at the Presidency College, Madras* he was also working as a *Member of the Committee of Music Academy, Madras* participating in all their academic discussions and sessions. He described in detail the atmosphere and practices of his Period in his Article '*ānāti sangīta kutchērīs*' (Music Concerts of those Days). In his Childhood in *Peddāpuram (East Godavari District)*, his Mother used to get up early in the Morning and while doing her Daily Household Chores used to *Sing Adhyātma Rāmāyana Kritis of Munipalle Subrahmanya Kavi, Bhadrāchala Rāmadās Kīrtanās, Tarangams of Nārayana Thīrtha, and Jayadeva's Ashtapadīs etc.* During their free times the ladies from their neighbourhood used to come and learn those Keertanas from her. Sri Appa Rao was telling that this environment created in him a lasting interest for music. Later on he went to *Amalapuram* for his High School Studies, and *Sri Chaganti Veerabhadrayya, Headmaster of the School* used to learn Karnātik Music from Sri Krishnayyar of Tamilnadu. Also the family members of Sri Veerabhadrayya were learning music from the artist. Later on Sri Appa Rao became a son-in-law of Sri Veerabhadrayya and the music environment in his house laid a deep foundation in his life.

#### Saint Tyagaraja Keertanas:

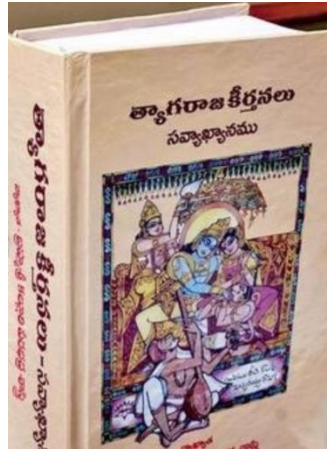
*Saint Tyāgarāja<sup>^</sup> Kīrtanās were composed in Telugu and Sanskrit. As his literature was available in Telugu only, the Tamil language South Indians while singing the Kīrtanās were giving importance for Rāga and Tāla only while they were not able to pronounce the telugu words properly. Their singing was detrimental to the Sāhitya of Tyāgarāja. Examples: 'Endu tāginadô' for 'Endu Dāginādô'; 'Rā rā Ravikala Sōma' for 'Rā rā Ravikula Sōma'; 'Manavyālakim parra datte' for 'Manavyālakimpa rādate' etc.*

*<sup>^</sup> Saint Tyāgarāja (4<sup>th</sup> May 1767 - 6<sup>th</sup> January 1847) was a Devotee of Rāma and one of the greatest Vāggeyakārās of Karnātik Music.*

To educate the Telugu, Tamil and other language speakers Sri Appa Rao made efforts to get a Complete Collection of *Srī Tyāgarāja Kīrtanās* and publish them with their Complete Meaning (*Vyākhyānam for the Sāhitya*). In Rajahmundry the Zamindar of Kandregula Established One *Gautami Vidyapeetham* and Sri Appa Rao started a *Madras Committee for the Vidyapeetham* in 1946.

This Madras Committee had many well-known members including Justice Sri P.V.Rajamannar. The Committee published many books and one of them was the

***Tyāgarāja Kīrtanās with a Vyākhyānam by Sri Kallūri Vīrabhadra Sastri. Another Publication was 'Rare and unpublished Kīrtanās of Tyāgarāja with Musical Notations in English'.***



***Tyāgarāja Kīrtanās with Meaning and Commentary by Srī Kallūri Vīrabhadra Sastri***

***+ All the Revised Edition Copies of Tyāgarāja Kīrtanās were sold out in due course of Time. A Facsimile Edition of the Original Publication was reprinted in 2017 by the Courtesy of Dr.Prasanna Kumar Ayyagāri and Dr.Raghurāma Rao of Visākha Cultural Association, Visākhapatnam. <sup>m</sup> Muvva in Krishna District, A.P.***

[Tyagaraja Kirtanalu 1948 Edition : Vissa Appa Rao \(Junior\) Scanning by Dr.Prasanna Kumar Ayyagari and Mr.Murali : Free Download, Borrow, and Streaming : Internet Archive](#)  
[Tyagaraja Kirtanalu 1948 Edition Scanning Report by Dr.G.Raghurama Rao . : Vissa Appa Rao \(Junior\) : Free Download, Borrow, and Streaming : Internet Archive](#)

**Srī Kallūri Vīrabhadra Sastri was a Pandit well versed in Puranas and was supported by Sri Appa Rao. All the initial 1948 Print Run copies of Tyagaraja Keertanas were exhausted in a very short period. Many persons used to write to Sri Appa Rao asking for the availability of the same. Due to some reasons Sri Appa Rao could not get the Publication Reprinted. But in 1985 according to a Resolution the Madras Committee the Copy Right for the Publication has been handed over to Srī Kallūri along with the Blocks of the Publication for a Republication. Unfortunately the Reprint could not materialise till 1975 when Srī Kallūri *republished the same in a different Format in Two Volumes with Subsidy from the Tirumala Tirupati Devasthanam.* <sup>+</sup>**

***+[tyagaraja keerthanalu modati bhagamu : Vissa Appa Rao \(Junior\) : Free Download, Borrow, and Streaming : Internet Archive](#)***  
***[tyagaraja keerthanalu modati bhagamu onwards with notation by MJ Rao : Vissa Appa Rao \(Junior\) : Free Download, Borrow, and Streaming : Internet Archive](#)***  
***[thyagaraja keertanalu. Second Volume by Kalluri Veerabhadra sastri.pdf](#)***

## Kshetravya Padams:

**‘Kshetravya Padams’ occupy a high level in the Tradition of Karnatik Music. Kshetravya<sup>#</sup> was well versed in the ‘Bharata Nātya Sāstra’ (Science of Dance outlined by Bharata Muni). He was a great scholar in music. He while singing his Compositions, used to <sup>#</sup>Kshetravya (c. 1600–1680) was a prolific Telugu poet and composer of Karnatik music.**

1. Express the Meaning through ‘Abhinaya’ (Dance action that is expressive of sentiment), Experience the Feelings, and himself felt the sentiments in his body and soul. He was a native of Muvva village in the Krishna District. His original name was ‘Varadayya’ and he composed Padams on his favourite Deity ‘Gōpāla’ of Muvva<sup>m</sup> temple, with the Padams ending on the Name of ‘Muvva Gōpāla’ as the ‘Mudra’ (Sign). He also wrote Padams on Deities of other Places. After some time he became a ‘Virāgi’ (Renunciate) in worldly pleasures. Since he was going around several Temple ‘Kshetrās’ (Places) in South India extensively he was called as ‘Kshetravya’. All this information was discerned by Sri Appa Rao garu through a serious research and was detailed in his Foreword for the Compilation of ‘Kshetravya Padams’. Kshetravya Padams: క్షేత్రయ్య పదములు by విస్సా

అప్పారావు

Publication date 1950 376 pages.

Topics City


Collection digitallibraryindia; texts; BharatZindabad

Language Telugu

Book Source: Digital Library of India Item 2015.333912

dc.contributor.author: Vissa Appa Rao

<https://ia601903.us.archive.org/2/items/in.ernet.dli.2015.333912/2015.333912.Kshetravya-Padamulu.pdf>

2. <https://publishing.cdlib.org/ucpressebooks/view?docId=kt096nc4c5&chunk.id=bm01&toc.depth=1&toc.id=bm01&brand=ucpress>  
Kshetravya. Padamulu. Edited by Vissa Appa Rao. 2nd edition. Rajahmundry: Saraswati Power Press, 1963. 
3. <https://archive.org/details/in.ernet.dli.2015.333912/page/n0> 376 pages  
PDF File  
Free Download:



*After Kshetrappa's death many of his popular Padams were being sung and set to Dance through Abhinaya by 'Devadāsīs' (Ladies attached to the Temple Service). Over Centuries the interest of people in Dance by Devadāsīs waned and there were very few who knew the Padams. In Tamilnadu some enthusiasts in Music were still singing them. Smt. Vīna Dhanammāl used to sing them while playing the same on Vīna (Stringed musical instrument). Along with Dhanammāl, her granddaughters Brinda and Mukta also were singing and continued the tradition. While Brinda and Mukta were singing One Dancer Smt. Balasaraswati was doing Abhinaya for the same. Unfortunately many were not aware of the correct 'Sāhitya' (wording) and 'Bhāva' (meaning) of the Padams.*

A nephew of Sri Appa Rao garu – Sri Manchāla Jagannādh Rao, who was a Veena Player while he was in Tamilnadu for some time, heard the Padams being sung by an old artist near his house and noted down the Sāhitya in his Note Books. When Sri Jagannādh Rao showed them to Sri Appa Rao garu he felt that they deserve Publication. With a great determination and effort Sri Appa Rao went over many places and collected many more Padams and the Publication was brought out in 1978 through the Andhra Gānakalā Parishad along with Swara and Notation in Both Telugu and Tamil. The Swara notations were contributed by Sri Jagannadh Rao, while they were edited by Sangīta Kala Nidhi Srī T.V. Subba Rao. Similarly 74 Rare and Unpublished Tyagaraja Keertanas were also Published with Swara Notation in Both Telugu and English under the Andhra Ganakala Parishad. Later on Adhyātma Rāmāyana Kīrtanās and Bhadrāchala Rāmadās Kīrtanās® were also published by the Ganakala Parishad. These publications were also a joint effort by Sri Jagannādh Rao and Sri Subba Rao. Sri Appa Rao treated Sri Jagannādh Rao as his own son and gave all support for his advancement in life.

@ Saint Bhadrāchala Rāmadāsu (1621-1670), also known as Kancharla Gōpanna was a Popular Telugu Poet and Devotee of Rama. He composed many Popular Kīrtanās in Karnatik music; *Munipalle Subramanya Kavi* composed Adhyātma Rāmāyana Kīrtanās during (1730-1780) which were popular.

#### Promotion of Art of Painting:

Sri Appa Rao was very fond of the Art of Painting. In the year 1911 the then Principal of the Rajahmundry Arts College, Sri Oswald Couldray spotted the talent for painting in the 14 year lad Sri Dāmerla Rāmā Rao and gave him all support for his development. During 1916-1919 Sri Rama Rao underwent training in Sir J.J. School of Arts and after coming back to Rajahmundry made a number of Paintings which received many awards in India and Overseas Countries. He also started an Arts School and trained many young artists. Unfortunately the people of Andhra lost this Prominent Artist at a very young age in February 1925. After the tragedy both the wife and sister of Sri Rāmā Rao being artists, also along with the Collaboration of two common friend artists Sri Varada Venkata Ratnam and Chemakur manged with difficulty the Art School but were unable to keep safely many of the famous paintings of Sri Rāmā Rao. Seeing the situation Sri Appa Rao made efforts for a Permanent place for the Art School and Paintings. Out of the Famous paintings one Water Colour Painting - 'Siddhārtha Rāgōdayam' which won a Prize



*at the Toronto International Art Festival in 1924 was picked and Prints of the Painting were taken in Madras, and sold to many art lovers, philanthropists, and highly placed gentlemen and establishments. Proceeds of the Painting yielded some finance initially. Seeing the efforts of Sri Appa Rao, many young artists gave exhibitions of their own Paintings and donated their proceeds to Sri Appa Rao and a New Building for the Art School was set up on 17<sup>th</sup> May 1957. Further efforts of Sri Appa Rao succeeded in getting a Recognition and then from 1977 onwards the Government of Andhra Pradesh is running the School.*

#### **Kuchipudi Dance:**

*Kūchipūdi Dance is a very ancient traditional art of Andhra Pradesh. Kūchipūdi village is in the Krishna District and a number of Brahmin Families living in that village were dedicated to this art for several generations. Over the years the number of people interested in learning this art form decreased. There was a danger of the disappearance of this art since people forgot this art. Even though there were still Masters of this art in the early Fifties of the Twentieth Century in the Kūchipūdi and Artists like Vedantham Lakshmīnārāyana and Chinta did a lot of Effort in teaching the art. But people were giving importance to the Bharat Natyam of Tamilnadu. There was an attempt to look down on the Kūchipūdi as a modern School dance!*

*Sri Appa Rao brought Sri Vedantham Lakshminarayana to Visakhapatnam during 1952-53 and Sri Lakshmīnārāyana explained lucidly the art form in detail – about the mudras and bhava Abhinaya and other specialities. Sri Appa Rao arranged a Lecture Demonstration by Sri Lakshmīnārāyana in the Town Hall of Visakhapatnam. Later on in the All India Dance Conference of the Sangīt Natak Academy of Central Government in 1968 held at New Delhi Sri Appa Rao presented a Research Paper\* and gave a lecture Demonstration explaining Kūchipūdi*

*[TWO HISTORICAL PAPERS ON KUCHIPUDI SCHOOL OF DANCE By Prof. Vissa Appa Rao \( 1958 And 1962\) : Vissa Appa Rao \(Junior\) : Free Download, Borrow, and Streaming : Internet Archive](#)*

*as the Original Ancient art of Andhra and artists of the Form went to Melattūr in Tamilnadu and spread it further. He explained that an offshoot of the Kūchipūdi Art Form was developed as Bharata Natyam. After the Delhi Conference Sri Appa Rao went around many places of the Country arranging Lecture Demonstrations by Sri Nataraja Ramakrishna and Sri Lakshminarayana. Further efforts by the Andhra Pradesh Government setting up the A.P.State Sangeeta Nataka Academy led to the Recognition by the Central Sangita Natak Academy of Kūchipūdi as a Classical Dance. The Recognition led to the establishment of a Kūchipūdi Academy and many Kūchipūdi Dance Schools in India. Many Artists of India and abroad learnt Kuchipudi dance and also started schools abroad.*

#### **Publication of Mridanga Tatwam:**

*Late Sri Dharmāla Rāmamūrthy was a great Mridang (Musical Percussion Instrument) Vidwan. He collected valuable information on Mridang from ancient Sanskrit*

*Manuscripts* and wrote a book titled '*Mridanga Tatwam*'. He was not in position to get it printed and on the advice of someone approached Sri Appa Rao garu for help. Sri Appa Rao arranged a Lecture Demonstration by Sri Rāmamūrthy at the Madras Music Academy Annual Conference before well-known Mridanga Players and Musicologists. As Sri Appa Rao himself was a well-known Musicologist, explained that the Book deserves a Publication. Sri Pālghāt Mani Ayyar and other top Mridanga Players Recognised this as a Standard for the Art Form. With the financial assistance from *Lalita Kala Academy* and other voluntary contributions the *Publication* was brought out in 1968. The Publication acknowledged the Technical and Physical Help of Sri Appa Rao in the Printing. <sup>M M</sup>

*Mridanga Tatwam has been reprinted as "Theory and Practice of Mridanga by Dharmāla Rāma Murthy and Venkateswara Rao" and is now available on <http://ebooks.tirumala.org/Product/?ID=1934>*

#### Promotion of Vipra Vinôdulu:

Sri Appa Rao was interested in promoting old knowledge practices. Once one group of '*Vipra Vinôdulu*' (*Brahmin Magicians*) came to meet him. He arranged an exhibition by them and many people from the neighbourhood visited our house to see their skills. When a curtain was opened viewers could see Complete Arrangements for '*Devata Archana*' (*Goddess worship*) with '*Pūja Pītham*' (*Pedestal for Keeping Goddess*), '*Ganta*' (*Pūja Bell*), '*Puja Dhupams*' (*Puja camphor and incense sticks*), '*Dīpams*' (*Oil lamps*), Cooked Food Items and Fruits for '*Naivedyam*' (*Offerings*) to Deity etc. were all ready. Many People think this as a *magic or confidence trick*. Out of the *Naivedyam offerings* – '*Gārelu*' (*Deep Fried Urad dāl Vadās*), '*Būrelu*' (*Deep fried sweet balls of gram dāl, jāggery or sugar and cardamom powder*), and '*Kajjikāyalu*' (*mixture of roasted semôlina, poppy seeds, nuts, a subtle sweet flavor of dry côconut and sugar laced with a tinge of cardamom*) – were given to us for eating and they looked real and tasty. People enjoyed their presentation. After the distribution of the offerings we requested the Vipra group to take food in our house. Their capacity to take food was really marvelous! Three times we cooked food in our house and served them. They challenged that they will not leave any item and consume everything. All the fruits and buttermilk available in our house they consumed fully. They also surprised us announcing that there are no food grains or vegetables or fruits left in our house at that moment! It was a rare view of a miracle for us.

#### Benign Professor:

Sri Appa Rao extended assistance to many poor and needy students in Rajahmundry, Madras and Visakhapatnam by paying the examination fees, tuition fees etc. He also gave money to many others who Did not get their scholarship fees in time to continue to study without break. Many of his students qualified and rose to the positions of Senior Secretaries in the ICS and IAS Cadres

and some occupied high positions in many technical and scientific organizations. Nobel Laureate Prof. Chandrasekhar was his student in the *Presidency College, Madras*.

On the Request of Sri Kattamanchi Ramalinga Reddi, Vice Chancellor of Andhra University Sri Appa Rao took Retirement one year earlier from the *Principalship of Rajahmundry Arts and Training Colleges*, and joined as the *Principal of Andhra University Colleges, Visakhapatnam*. He Contributed for the Development of the University and its Faculties. He took a special initiative to get a Learned Scholar appointed in the University Teaching Faculty. He also contributed from his Monthly Salary – Rs.25.00 to a Studentship and Rs.75.00 to a Research Scholarship Regularly. For many other students he arranged Food and Residential Accommodation in his own Residence. He used to be strict and also straightforward in his administrative job and dealings in the University Senate. Due to some unforeseen developments he quit his job before the Completion of his Contract with the University.

He was sending money regularly through Money Orders to many needy people. He was for a long time giving Financial Assistance to one of his own Childhood Guru (Teacher) as long as he was alive! Many of his Philanthropic acts were never disclosed to others. He was giving encouragement to promising young artists by arranging special programs before invited audience in his own house. He was telling many worthy things of knowledge to the children of the house. He was explaining that such knowledge is precious and not taught in educational institutions.

#### Family Traditions in Music and Telugu Literature:

Musical knowledge was known to my Mother-in-law, her daughters and also her sisters' family members. My Father-in-law was also having a good voice and he was singing melodiously poems from Telugu Classical literature — *Gajendra Mōksham*, *Rukmini Kalyānam*, *Māhābhāratam*, and *Dāsarathi Satakam*<sup>P</sup>. and <sup>P</sup> '*Gajendra Mōksham*' and '*Rukmini Kalyānam*' are from the Telugu '*Srimadāndhra Mahābhāgavatamu*' <sup>m</sup> written by Saint Poet Bamma

*Potana (1450-1510 CE); 'Sanskrit Mahābhāratam' written by Sage Vedavyāsa was translated into Telugu by Kavitrāyam Poets*

*(Nannayya, Tikkana & Errapragada) during 11<sup>th</sup> to 14<sup>th</sup> Century CE; 'Dāsarathi Satakam' was written by Saint Poet Kancharla Gopanna also known as Bhakta Bhadrāchala Rāmadās in 17<sup>th</sup> Century CE. <sup>m</sup> A Translation of Sanskrit Bhāgavatha Purāna by Sage Veda Vyāsa.*

Sri Appa Rao's Father and his Father's Elder Brother were both having knowledge of Literature. Sri Chellapilla Venkata Sastri, *Andhra's Poet Laureate and also the Guru of Sri Veturi Prabhakara Sastri* was staying at *Kadiam*, a well-known place for Nursery Plantations near *Rajahmundry* and he was regularly visiting Sri Appa Rao's residence. During his visits there used to be a gathering of poets and their recitations. This way he

was also having knowledge and interest in Literature. My daughter Rajeswari started learning Music from a teacher at the age of 8 years onwards under the supervision of Father-in-law. He used to correct the teacher also whenever necessary. Daily different type of persons used to visit him at the house and request him for speaking on various topics and issues in their association meetings and also request for Articles on Special Topics for their Souvenirs and Magazines.

#### Personality and Activities:

He was maintaining Punctuality and also talking to the Point in the meetings. He was disciplined in life and getting up on time in the morning, taking bath and taking afternoon rest etc. He used to go for walk regularly. He was taking food without chilies and spices and also in limited quantities only. *Whenever he was going out of the house on some work he was acquainting every member of the house about where he was going, on what work and when he was coming back. After coming back home he used to talk to every member of the family and find what they are doing at the moment.* Many people do not think these are necessary in life!

He was a Member of the Advisory Board of Music for the All India Radio, Sangit Natak Academy, and Sahitya Akademi. He was also on the one man Committee to assess the Music Colleges at Vijayanagaram and Vijayawada and on his Recommendations New Syllabi, Subjects and Post Graduate Degree Courses were started at these institutions.

#### Astrology and Yoga:

He was interested in Astrology as a Science and also in the '*Nādi Granthās*'. He was drawing '*Jātaka Chakrās*' (Horoscopes) and *Explaining the Past and Foretelling Future*. Many *astrologers* used to Foretell through their '*Devi Upāsana*' (Devi Puja) Powers and also through '*Prasna Sastra*' (Science of Numbers) while drawing *Jataka Chakras*. Sri Appa Rao used to meet these people and Compare his Forecasts with theirs. In the Course of time when he was in Madras He met Sri Veturi Prabhakara Sastri and came to know about the Yoga Practice of Master CVV. His friendship developed into seeking Cure for the ill-health of his wife. His wife was suffering from Diabetes and Asthma for very long time and after the Prayer treatment she had a very good relief. After this development he became an ardent Practioner of Yoga and was regularly attending the Prayer Sessions at Sri Sastri's House.

In 1940 my husband's youngest brother Sri Vissa Subrahmanyam, at the age of 10 years, was inflicted with a disease of nerves known as '*Chorea disease*' in Visakhapatnam. The doctors revealed that there is no treatment available for the same and the patient needs a lot of rest. The disease leads to a development of heart weakness the patients usually may have a short period of life only! While my Father-in-law was worried at that time Sri Prabhakar Sastri garu visited Visakhapatnam and did treat him which gave some

relief. He suggested that an Intense and continuous treatment is required and the boy should be brought to his House in Tirupati where the effort will be continued. Accordingly Sri Subrahmanyam was taken to Tirupati and he was treated with positive results. The Heart weakness disappeared and after three years he was Re-examined by Dr.Kutumbaiah, Physician of Visakhapatnam who declared the progress as a miracle through Yoga Prayers. Dr.Kutumbaiah was a brother of Sri Pūdipeddi Chenchayya, who was a disciple of Master CVV. Later on Sri Subrahmanyam studied privately and passed Matriculation Examination and after further higher education settled down in life successfully, and married. This event bonded the friendship of Sri Appa Rao with Sri Sastri garu.

#### Madras Music Academy and Musicology:

Sri Appa Rao had a modern outlook in many issues in life. Because of his outlook, and my upbringing in my Veturi house, I was lucky to know and understand many things in Music, Literature and Science and also Values in Life and able to integrate them in my own life. Sri Appa Rao was a *Founder Member of the Madras Music Academy since 1927* and was participating regularly in *Academic Discussions in the Academy's Annual Conventions and Concerts*. In the *Music Academy's Teachers College of Music - Diploma Course in Music and Pedagogy* - he introduced a *Syllabus on Physics of Music*. This course covers *The Stringed Instruments and their Vibrations, 'Nāda Swarūpam' (Physical appearance of sound), 'Tambūra Sruti' (Tuning of Vocal Music and Stringed Instruments with Tambura) and its "Prasasti' (Eminence or Guidance) etc.* The Theory and Practice of this Syllabus was introduced by him in the Course. *The Academy Felicitated him with a Citation for his Musicology Contributions in its January 1959 Annual Convention.*

Sri Appa Rao did yeoman service for the Promotion of Fine Arts in Andhra. The People of Andhra are indebted to him.



He never sought or was interested in Awards and Honours for his services. He led a Simple Life. Once a relative of Sri Appa Rao asked him "Sir, why you are spending all your earning on donations and philanthropic acts? You have no savings left for your sons." He replied that his sons have come up in life by their own hard work and efforts. He has no regrets that he did not leave them any assets. His sons also do not have any interest in his earnings. Extending a helping hand to the needy gives him satisfaction and happiness. Earning money is only for meeting the needs of life and not for saving.

In this *Centenary Year of Sri Appa Rao* we have to make all efforts to create assets for remembering his contributions to the society. This is my Hope!

## 2.2 THE UNFORGETTABLE GREAT MAN: OUR BROTHER-IN-LAW SRI APPA RAO

\*

By

**Dr.Veturi Chandrasekhara Sastri**

In my Long Memory Tape Very Few Close Persons imprinted their un-erasable impressions of life. Brother-in-law Sri Vissa Appa Rao was one of them. I saw him first time in my brother's company in Madras in 1930. At that time my brother was working as a *Pandit* in the *Madras Oriental Manuscripts Library* and he was staying in a house in *Venkata Ranga Pillai Street, Triplicane*. Prof. Appa Rao was working as a *Physics Professor* at the *Presidency College* and staying at a House in *Nallathambi Street*, nearer to my brother's house. The distance between the two houses was nearly four furlongs (0.8044 kms).

Fourteen years before my meeting with Sri Appa Rao, my brother was initiated into the Yoga of Master CVV of *Kumbakonam* (16<sup>th</sup> June 1916). He was practicing the Yoga daily twice – in the morning and evening in his house. At the Practice some of his *Yoga Friends* (*Mediums* of Master CVV) and some people who were not keeping well were also participating. Since the sick persons were getting relief they also started regularly attending the Prayers. Sri Appa Rao's wife Smt.Rajeswaramma was not keeping well she was coming for the Prayers with her husband and sometimes depending upon the necessity, my brother used to visit their house for \**Translation of Telugu Article 'మరపు*

*రాని మహా మనీషి మా అప్పారావు బావగారు* ' ('*marapu rāni mahā manīṣi mā appārāvu bāvagāru*') - from

Archana: Proceedings of the Centenary of Vissa Appa Rao, 1984. *Translated and abridged by Vissa Appa Rao (Junior)*

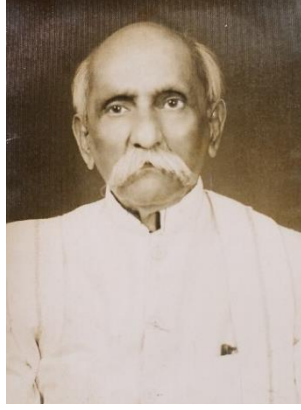
Archana Editor's Footnote: "Sri Veturi Prabhakara Sastri's younger brother - Dr.Chandrasekhara Sastri knew Sri Vissa Appa Rao very well from Close quarters. He addressed Sri Appa Rao as "In our Present Life our Brother showed you as our Friend before he left his Physical Body to Heaven". Talking to Sri Vissa Appa Rao itself was an educational attainment. An association with him was leading to mental development. He was an old man who led his life daily with a new enthusiasm like a young person. He was an unselfish 'karma yōgi' ".

Treatment. According to convenience, Sri Appa Rao used to join for prayers in the Mornings and in the Evenings. After coming back from his college in the evenings he was

\**Translation of Telugu Article: 'బహుముఖ ప్రజ్ఞాశాలి శ్రీ విస్సా అప్పారావు గారు'* from "Archana:

*Proceedings of the Centenary of Vissa Appa Rao, 1984".*

regularly attending the Prayers. After the completion of evening Prayers there used to be Regularly Discussions regarding the Experiences in the Prayers, the Treatment Developments, *Nādi Granthās*, their Authorship, and their Reliabilities, and many scientific developments.



Prof. Vissa Appa Rao



Dr. Veturi Chandrasekhara Sastri

During those days I was doing Medical Practice at *Jaggayyapeta*, Krishna District and used to visit frequently my Brother's place in Madras and participate in the Yoga Discussions. Over a period of time my acquaintance with Sri Appa Rao developed into a friendship and later on materialised into a family relationship through my brother. Even though Sri Prabhakara Sastri was younger to Sri Appa Rao by four to five years, still Sri Appa Rao was regarding my brother as a *Guru*.

*My Brother was also treating Him as his Confidant and consulting him on many Issues of Life and following his Advice.* Wherever he was, at *Rajahmundry*, *Visakhapatnam* or other places, and whenever it was possible, Sri Appa Rao was joining him in his Yoga Practice.

This frequent association developed into a Family Relationship between their families over-riding the *Niyogi* and *Vaidiki Sakha differences of Brahmin Community*. The marriage of Dr. Ramachandra Rao, eldest son of Sri Appa Rao and Chy. Sow. Lalita, eldest daughter of Sri Prabhakara Sastri was celebrated on 28<sup>th</sup> May 1938 in the presence of many people at *Vijayawada*. On that occasion Sri Appa Rao out of his Regard for Sri Prabhakara Sastri Sang a Poem modified after a *Popular Telugu Classic Poem* # –

“జలజాత ప్రభావాదులున్ మనములో చర్చించి భాషావళిన్  
పలుకన్ లేని ప్రభారాహ్వయ పరబ్రహ్మంబు మా ఇంటిలో  
చెలియై మేన మరందియై సచివుడై చిత్ర ప్రియుండై మహా  
ఫల సంధాయకుడై చరించుటది మా భాగ్యంబు విప్రోత్తమా”

**Meaning:** “Parabrahma named as Prabhakara, who cannot be described in words  
Even after deep mental contemplation by Lotus born **Brahma** and  
others,

*is our Friend, born in our Family as our Sambandhi<sup>^</sup> (Brother-In-law),  
is our Confidential Adviser, a lover of Fine Arts, and living as a person  
Securing great results for us, is our Fortune Oh great Brahmana!”*

<sup>^</sup>*Telugu Word ('sambandhi' is a synonym of – 'viyyankuDu')*

*Prof. Appa Rao spent about three decades of his life in the Teaching Profession and obtained the affection and respect from his many students. Innumerable number of his students occupied very high positions not only in Andhra and Tamilnadu but also in many other states. He was a Chief of the Teaching Fraternity. Once I walked with him from his residence in Pattabhipuram to a nearby Post Office in Guntur. In that short walk of 15 minutes duration three gentlemen met us on the way one after the other and with smiling faces, respectfully wished him and enquired after his wellbeing. I came to know that they were his old students – one was an auditor, one was a college lecturer and another was a sub-registrar.*

*Professor was a mild natured person. As an Ideal Teacher, he focussing his special attention on Discipline and not tolerating any violation of rules. He was frank and also bringing a change in the disorderly behaviour of his students with sharply touching sagacious talking. While he was leading a disciplined life he was desiring that others also live like that.*

*When he was in service, Professor was taking his House Cook along with him whenever he was going out to other towns. He was getting the food cooked according to his taste and taking in limited quantities only at regular times. Spices and chillies in food were not suiting to his health. He was liking Cow's Milk, Fresh Butter milk made out of Cow's Milk and which was not sour, and bland vegetable curries. He was taking such food only. While sleeping he was having a mosquito net over his bed whether it was day time or night time. Even when he was going outstation he was carrying his mosquito net with him. Irrespective of the situation whether a ceiling fan or a table fan was there, he was as a practice using a Palmyra leaves hand fan. Now and then he used to wave the hand fan gently for air circulation.*

*Few years after his Retirement he was staying with his Eldest Son Dr.Ramachandra Rao, who was working as a Professor of Anatomy at the Guntur Medical College. At that time my Eldest Son Sundara Ramamurthy was working as a Correspondent with the Andhra Prabha News Paper, and my Younger Son Sadananda Murthy was studying in the Guntur Medical College. Since both of them were also in Guntur, I used to visit them frequently and at the same time I was frequently meeting Professor Appa Rao and discussing many things with him. We used to have warm and exciting discussions.*

*Professor was very affectionate towards his relatives and friends. Wherever he was going, he used to meet the relatives and friends there and enquire after their welfare and he was thinking it was his moral Duty to do so. When he was going to Vijayawada he used to meet Sri Digavalli Siva Rao, Sri Patibanda Appa Rao, Sri Puttaparthi Srinivasacharlu, Dr.Chaganti Suryanarayana Murthi, and other friends. Sometimes knowing that he arrived in Vijayawada they themselves used to come and meet him. Whenever they were requesting him for help he used to extend to them all that was possible.*

*# See - in this Publication: 4.12 Vyākhyānam on Jalajāta Prabhāvādulun by Dr.Veturi Anandamurthy.*



*Once I happened to attend a family function along with my elder brother in Rajahmundry and we happened to receive his hospitality at his beautiful house named 'Rājamandiram'. The kindness and affection he showed to us at that time, is unforgettable for ever. He drove us in his own car to Kadiam and gave us an opportunity to meet Sri Chellapilla Venkata Sastri <sup>c</sup>, who was the Guru of my brother Prabhakara Sastri. The two days we spent with him in Rajahmundry were eventful and passed in no time. On another good event I went with Him to his Co-son-in-law, (Late) Sri Manchāla Jagannādh Rao's house in Peddāpuram. Our stay for three days was very happy. He took me around the Town and introduced me to many friends of his. He showed me his ancestral building which was given to a 'vēda pāṭha sāla' (వేద పాఠ శాల) (school for teaching vēda<sup>v</sup>). He also showed me Painting Pictures in the Peddāpuram Rājāh's Palace.*



**Prof. Vissa Appa Rao**



**Ancestral Building of Vissas at Peddāpuram  
(24<sup>th</sup> May 1884 – 30<sup>th</sup> June 1966)**

In spite of my being many years younger to him He was treating me with affection and kindness and talking to me nicely whenever I was meeting him. He was adroit and artful in conversation, using romantic words and now and then using innuendos. *He was a connoisseur of arts, literature and aesthetics.* Once talking about his

Pension he expressed that “By Birth I am a ‘āruvēla (six thousand) niyōgi brāhmin’, but my Pension is only ‘ayidu vēlu’ (five thousand)!”

Sri Appa Rao was analysing everything with a deep scientific outlook to arrive at the truth and reality. Not only in his Subject of Physics, he was also having a deep understanding of Astronomy, Geology, Astrology, Music, Classical Dance, Sculptural art and Painting, etc. His was a versatile wisdom (‘prajna’). After his retirement from Service he made a deep study and wrote books on ‘paramānu śakti’ (Atomic Energy), ‘ākāśam’ (Sky and Stars), and ‘vyāsāvali’ (Collection of Essays) on difficult Science Topics in a simple understandable Telugu language. With his - detailed ‘pīṭhika’ (Introduction), Index and Sri Kallūri Virabhadra Sastri’s Philosophical Explanations for the Comprehensive collection of Tyāgarāja Kīrtanās - a Compendium was published. In 1956 he published under his Editorship a Souvenir with Contributions by many well-known writers on the ‘vardhanti’ (Death Anniversary) of Poet Kshetrayya. All these were ‘tārkanams’ (Evidences) of his continual efforts of service to the Society in Popularising Science and Arts.

Sri Appa Rao spent nearly twenty years of his life in the company of my brother Sri Prabhakara Sastri. He was in the company of Sri Sastri in his last moments of life. While he was fortunate to be with Sri Sastri’s own family in the last moments, myself and my younger brother could not have the last glimpse of Sri Sastri. Even after the Niryanam of Sri Sastri, Sri Appa Rao continued to be our Family Member and he was continuously treating us with love and affection and enquiring after our welfare.

Once in connection with the College admission of a young person I wrote a letter to him seeking his advice. In that letter I wrote a Poem patterned after a Famous Poem from Telugu Mahabharatam:

See Telugu Poem on Next Page >>>

<sup>v</sup> vēdas are a large body of texts of sacred knowledge in Ancient India.

<https://en.wikipedia.org/wiki/Vedas>

c

Chellapilla Venkata Sastri (1870-1950) was the First Poet Laureate of Andhra Pradesh.

“ఆపద గడువంబెట్టగ

నోపి శుభంబైన దాని నొడగూర్చగ మా

కీపుట్టువునకు భ్రాతృ

శ్రీపాదులు మిమ్ముజూపి చేరిరి దివికిన్”

“To ward off calamities and to see  
that things which are good are achieved,  
in our present birth, our respected brother  
showed you as our guide and went to heaven!”



Twenty days after writing this letter I met Sri Appa Rao. On seeing me he expressed with humorous finesse *“Brother-in-law, you launched a poem on me?”* and I replied in Telugu - *“Nīvu nērpina vidya ye Nīrajāksha!”* (Oh, Lotus Eyed Krishna, it is all your Teaching) – *“Just as You Addressed my Brother with ‘Jalajāta Prabhāvādulun...’ poem, I launched ‘āpada gaduvambettaḡa’ poem on you”*. He responded *“Well done, brother-in-law, you made a good rejoinder to mine”*.

*More than eight decades of his long and entire life, he lived with great enthusiasm like a young man. He was Famous as a Major Educationist and a Professor of South India. Even after Retirement whenever opportunity materialised he involved himself in cultural programmes and strived to promote science and arts popularisation among the people at large, spending all his energies and money unselfishly. He was a ‘karmayōgi’. May His Type of People Proliferate in the Society!*

*Our brother-in-law Sri Appa Rao made an indelible impression on my ‘Smrutipatham’ (memory path).*

.....

**\*Extract from the Autobiography of Dr.V.Ramachandra Rao (page 10): Unpublished**

*“My marriage with Lalita took place on 28<sup>th</sup> May 1938 at Vijayawada during the vacation time, when I was doing my Second Clinical Year of MBBS course. Mediums (Disciples of Master CVV) – Srī Sankarayyar, Srī Thāthi, Srī N.R.B.Venkatachalam, and Srī Māpiḷḷai – attended my marriage at Vijayawāda. After the marriage they came along with Sri Prabhakara Sastri to Rājahmundry and we had Prayer Sessions for three days, in the Balcony on the Terrace of our New House at Dānavaipēta. The Prayer sessions created a Good Aura in our House.”*

*Also see the following Articles from “Yoga Life of Vissas who Practiced Bhriktha Rahita Taraka Raja Yoga” for more Information:*

4.4 Veturis and Vissas by Dr.Vissa Ramachandra Rao

4.12 Vyākhyānam on Jalajāta Prabhāvādulun by Dr.Veturi Anandamurthy

4.14 I and our Elder Brother Sri Prabhakara Sastri by Dr.Veturi Chandrasekhara Sastri



## 2.3 THE MUSIC ACADEMY MADRAS

CITATION to Prof. VISSA APPA RAO on the 3<sup>rd</sup> Annual Conference

### THE MUSIC ACADEMY - MADRAS 3rd ANNUAL CONFERENCE

**Prof. Vissa Appa Rao**

#### THE CITATION

Born in April 1884 at Peddapuram, East Godavari District ; graduated in Physics from the Government College, Rajahmundry, and the Presidency College, Madras ; rose to the position of Professor of Physics in the Madras Educational Service, Principal of Arts College, Rajahmundry, Training College, Rajahmundry, and of the Andhra University Colleges, Waltair : member of the Music Academy, Madras, from the very beginning, has co-operated in the Academy's Teacher's College of Music by organizing teaching and himself lecturing on the physics of sound and theory of music ; connected with Music and Dance institutions in Andhra ; member of the Advisory Board of the A.I.R., Vijayawada, and Andhra Pradesh Sangeeta Nataka Academy ; took initiative in publishing rare kritis and compositions of Thyagaraja and Kshetragna, and himself published several articles on Music and dance ; has consistently worked for promotion of music and dance activities in Andhra Pradesh.

**To Professor Vissa Appa Rao**  
**1-1-1959**



## 2.4 Sidha Nagarjunudu: Acharya Vissa Appa Rao by Dr.Veturi

Sankara Sastri\*

From: Archana 1984

# సిద్ధనాగార్జునుడు ఆచార్య విస్సా అప్పారావుగారు

— డా॥ వేటూరి శంకరశాస్త్రి

[నిపురు గప్పిన నిప్పు ఆచార్య విస్సా అప్పారావుగారు. వారి పాండిత్య ప్రతిభా విశేషాలు అంతర్నిగూఢమైనవీ, బహుముఖమైనవీ. ఎవరైనా జిజ్ఞాసతో కడపిచూస్తేకాని అవి బయటికి రావు.

ఇప్పటికి 60 ఏళ్ళ పూర్వపు మాట, మదరాసు ప్రెసిడెన్సీ కాలేజీలో పేరు ప్రఖ్యాతులు గడించిన ఆంధ్ర ప్రముఖులు ఆచార్య పదవిలో ఉండేవారు - విస్సా అప్పారావు, పోతరాజు నరసింహము, వేమూరి విశ్వనాథశర్మ, తనికెళ్ళ వీరభద్రుడు మొదలగువారు. ఈ విద్యాధికులందరికంటే అప్పారావుగారిలో విశేష మేమిటంటే, లలితకళలైన సంగీత సాహిత్యములలోను, చిత్ర నృత్య విద్యలలోను, జ్యోతిశ్శాస్త్రమునందును వీరికి మంచి పాండిత్య ముండేది.

అప్పారావుగారు పాట కచ్చేరీలు చేయలేదుగాని, సంగీతశాస్త్ర మర్కాలు, మరుగులు మిత్ర గోష్ఠిలో వివరించి చెబుతూ కొన్ని కీర్తనలు పాడి వినిపిస్తూ ఉండడం నేనెరుగుదును. పాటకచ్చేరీలు విని ఆనందించ లేని నాకు వీరి ప్రసంగాలవల్ల సంగీత శాస్త్రాభిమానము కలిగినది. వీరికి లలితకళలందు గల అభినివేశానికి నిదర్శనముగా త్యాగరాజస్వామివారి కీర్తనలను చాలా సంపాదించి సంస్కరించి, శ్రీ కల్లూరి వీరభద్రశాస్త్రిగారిచేత తెలుగు వివరణ వ్రాయించినారు. త్యాగరాజస్వామివారి హృదయ మెరిగి, త్యాగరాజస్వామివారి జీవిత విశేషాలన్నీ సంపాదించి సంస్కరించి, విమర్శనాత్మకమైన పీఠికతో ఒక బృహత్ గ్రంథమును ప్రకటించినారు.

సర్వసామాన్యముగా శ్రేత్రయ్య పదాలు నీచ శృంగారభూయిష్టమైనవని కొందరు తలచుట కద్దు. కాని విజ్ఞులైన పెద్దలు అలా భావించలేదు. శ్రేత్రయ్య పదాలలో అక్షరాక్షరము పరమ ప్రమాణమున్న బహుజనపల్లివారి మతాన్ని పసప్పాకం ఆనందాచార్య వంటివారు ఆమోదించిన వైఖరిని వేటూరివారు పేర్కొనడమేకాక అప్పారావు పంతులుగారిని శ్రేత్రయ్య పదాల ప్రకటనకు ప్రేరేపించినారు. ఆ ప్రేరణతోనే అప్పారావుగారు శ్రేత్రయ్య పదాలు సంపాదించి, సంస్కరించి ప్రకటించడమేగాక, పదాభినయ భావానుగుణముగా కొన్ని త్రివర్ణ చిత్రములను కూడా వ్రాయించి, శ్రేత్రయ్య జీవిత విశేషములను సందర్భానుసారముగా సంధానపరిచి, శ్రేత్రయ్య మొవ్వ గ్రామమునకే చెందినవాడని పీఠిక వ్రాసి ప్రకటించినారు. అంతేకాక, శ్రేత్రయ్య రూపానికి మూర్తికల్పన చేసినవారుకూడా వీరే. రసహృదయులైన శ్రీ రాజమన్నురుచేత కూడా ఆ పదాల ప్రాశస్త్యాన్ని సమీక్షింపజేసినారు.

౧౩౦

129



ఇంతేకాకుండా రాజమహేంద్రవరములో దామెర్ల రామారావు ఆర్ట్ గేలరీ నెలకొల్పటానికి ఎంతో పాటు పడ్డారు. మొదట్లో నటరాజ రామకృష్ణగారి నాట్యకళా వైదుష్యానికి ప్రజలలో ఆదరమును సంపాదించిపెట్టుటకై పాటుపడ్డది వీరేనని చెప్పిన ఆతిథ్యయోగిగాదు. ఈ విధముగా సంగీత, సాహిత్య, చిత్ర, నృత్య కళలకు నిస్వార్థమైన, నిరాడంబరమైన సేవచేసి కృతార్థులైనారు.

వీరి ఆభిమాన విద్య ఫిజిక్స్. అందు ఆచార్య పీఠము నధిష్టించి ప్రభుత్వ కళాశాలలో ఆచార్య పదవిని నిర్వహించి ఉద్యోగ విరమణానంతరము ఆంధ్ర యూనివర్సిటీ ఆర్ట్స్ కాలేజీ ప్రిన్సిపల్ పదవిని నిర్వహిస్తూ ప్రభుత్వముతో మాట వట్టింపు వచ్చి పదవికి రాజీనామా చేసి బయటికి వచ్చినారు. భారతీయ సంస్కృతి సంప్రదాయములందు వీరికి ఆభిమానము మెండు.

ఇవన్నీ సరే అందరికీ తెలిసినవే. ఇంకొక విషయము చెప్పదలచినాను. నా చిన్ననాటి మాట. ఒకనాడు శ్రీ అప్పారావుగారు మా అన్నగారు శ్రీ ప్రభాకరశాస్త్రిగారిని చూడగోరి వచ్చినారు. మంచి వయసులో మెలికట్టు మీసాలతో స్ఫురద్రూపంతోవున్న అప్పారావుగారు ఆనాడు మృత్యుంజయ విలాసమునే గ్రంథాన్ని సంపాదించగోరి మా అన్నగారి కడకు వచ్చారు. అదే నా ప్రథమ దర్శనము; వారిరువురి ప్రథమ పరిచయమును అది మొదలు వారి మైత్రి క్రమంగా పెరుగసాగింది. కుంభకోణము మాస్టరు సివిల్ భృక్త రహిత తారక రాజయోగమున ఉత్తమ సాధకులైన పూజ్యులు శ్రీ ప్రభాకరశాస్త్రిగారితో చిరకాల పరిచయమున వీరును గొప్ప అనుభూతులను పొందగలిగారు. అప్పారావుగారు నియోగి బ్రాహ్మణులు. ప్రభాకరశాస్త్రిగారు వైదిక బ్రాహ్మణులు. నియోగులకు నీరుక్కువని, వైదికులకు ఛాందస మెక్కువని జనవాడుకగా చెప్పుకుంటారు. ఆ రోజులలో నియోగి వైదిక కక్షలు ఎక్కువగా ఉండేవి. అవన్నీ విస్మరించి యోగ మిత్రులైన వీరిద్దరు వియ్యమందుట ఒక విశేషము. ఆ రోజులలో ఈ శాఖాంతర వివాహమును గురించి ఆంధ్రదేశమున కొంత సంచలనమే కలిగినది. ఈ వివాహమునకు ఆహ్వానించడానికి శతావధాని చెళ్ళపిళ్ల వెంకటశాస్త్రిగారి వద్దకు వీరుభయము చెళ్ళగా వార్ధక్యమున వారు రాలేక 'కృష్ణా' పత్రికలో అభినందన పూర్వకమైన ఆశీర్వాచన వ్యాసాన్ని ప్రకటించినారు. ఉభయ వంశములవారు వీరి బంధువులు కొన్నాళ్ళు భీష్మించుకోవడం కూడా జరిగింది. తర్వాత ఇట్టి వివాహములు సర్వసాధారణమైపోయినవి.

ఆ రోజులలో మాస్టర్ సివిల్ యోగ సాధనలో ప్రముఖులైన కొందరి జాతకములు "కాకాభుజందర్" అనే ఆరవ నాడి గ్రంథము నుండి చదవడం జరిగేది, సాధకులైన వారి జాతకముల నుండి అనేక గాథలు వెలువడినవి. అందు అప్పారావుగారి జాతకములో వెలువడ్డ కొన్ని పూర్వజన్మ గాథలు నేనెరుగుదును. ఆవి యెల్ల వెల్లడించుట నా పని కాదు గాని, 1959 వ సం॥లో జగ్గయ్యపేటలో బుద్ధ జయంతి ఆతి వైభవముగా జరిగినది. వాని కనుబంధముగా ఒక సంచికను ప్రకటించడమైనది. దానిలో ప్రచురించుటకు ఒక వ్యాసమును వ్రాయమని అప్పారావుగారిని నేను కోరగా, "సిద్ధ నాగార్జునుని" గూర్చి ఒక పరిశోధనాత్మకమైన మంచి వ్యాసము వ్రాసి కచ్చి నారు. అందు సిద్ధ నాగార్జునుని గూర్చి కొన్ని కొత్త విషయములు వెల్లడించినారు, అది చూచిన మీదట నాకు కొంత ఆశ్చర్యమే కలిగినది. ఇతరులు నమ్మినా నమ్మకపోయినా ఆ వ్యాసము వ్రాయుటలో వారి జ్ఞానాంతర సంస్కార విశేషము వాసించినదని నేను నమ్మినాను. అట్టి విలువగల వ్యాసమునే వారి స్మారకార్థము ప్రకటించే సంచికలో మరల ప్రకటించుటవల్ల వారిని సంస్మరించుట అగునని తలచుచున్నాను.

డా॥ వేదూరి శంకరశాస్త్రి

అప్పారావుగారు పూజ్యులు మా అన్నగారైన ప్రభాకరశాస్త్రిగారికి వియ్యంకులైనందున బంధురీత్యా నాకు బావగారు. ఆ బంధుత్వ పరిణామము యిట్టిది.

అహేతుః పక్షపాతో యస్తస్య నాస్తి ప్రతి క్రియా,  
సహి స్నేహాత్మక స్తస్తరస్తర్మర్మాణి సీవ్యతి.

అంతఃకరణ తత్త్వవేత్తయైన భవభూతి మహాకవి పై విధంగా అన్నాడు.

నిర్దేశాదులైన స్నేహమునకు ఏ విధము చేతను భంగము కలుగదు. అది యొక దారము వంటిది. తోని మర్మములను - హృదయములను ఒకటిగా చేర్చి కుట్టును. అప్పారావుగారి ఆత్మోన్నత్యానికి ఇవే నా నివాళులు. —రచయిత.]



### 3. List of Publications IN ENGLISH AND TELUGU

By Prof. VISSA APPA RAO

#### List of Books

#### Published by Appa Rao

- |  |                                    |   |
|--|------------------------------------|---|
| 1. Intermediate Physics  | 1938                               | Published by the Andhra University.   |
| 2. Atomic Energy—In Telugu   | 1952                               | Translations of its second edition were published by the National Book Trust in seven Indian languages. |
| 3. Vyasavali   | 1956                               |   |
| 4. Akasam  | 1960                               | Had won Rashtrapathi Award of Rs. 1000 for the best children's book published for the year 1960.        |
| 5. Aspects of Science by C.V. Raman—Translated into Telugu-        |                                    | Published by the National Book Trust 1964   |
| 6. Nritya Sangeeta Vyasa Rathnavali                                | 1966.                              |   |
| 7. Kshetravya—   | A special number edited by Apparao | Released at the inauguration of Kshetravya Padabhinaya Prachara Samithi at Vizag 1956.                  |
| 8. Thyagarajaswamy Satavarshikotsava Sanchika                      | Jan. 1947.                         |   |
| 9. Thyagaraja Kirtanalu, Savyakhyanam                              | 1948.                              |   |
| 10. Kshetravya Padamulu  | 1950 & 1954 (2nd Edn.)             |   |
| 11. Apoorva Thyagaraja Kirtanalu with Notation in Tamil and Telugu | 1951.                              |   |
| 12. Padams of Kshetragna 78—with Notation in Tamil and Telugu      | 1954.                              |   |
| 13. Adhyatma Ramayana Kirtanalu                                    | 1963.                              |   |
| 14. Ramadas Kirtanalu  | 1964.                              |   |

Items Nos. 8 to 14 were published by the Madras Committee of Andhra Ganakala Parishad, with Apparao as Convenor.



### 3a. LIST OF ARTICLES BY Prof. Vissa Appa Rao

#### List of Articles by Appa Rao

1. A is for Atom.
2. A little known Treasure.
3. Adhyatma Ramayana Kirtanams.
4. Arohana and Avarohana Kalaswaras of 94 Karnataka Ragas taken from Vijayanagaram Manuscripts.
5. Bhadrachala Ramadas.
6. Calendar Reform.
7. Dance Art in Andhra Pradesh, The
8. Discovery of Neutron.
9. Evolution in Indian Music—The Classical Tradition, The
- 10.\* Evolution of Raga in Karnatak Music, The
11. Flute and its Theory.
12. Genius of Thyagaraja, The
13. Internal Evidence of Kshetragna Padams
14. Kshetragna.
15. Kuchipudi School of Dance—History of Development, Contribution of Siddhendra Yogi, and Tirthanarayana Yati.
16. Life and Padams of Kshetrayya
17. Lights and Shadows.
- 18.\* Looking Back—An Educational Officer.
19. Music of Andhra, The (A History of Gurukula in Andhra).
- 20.\* My College Days.
21. Philosophy of Sarvodaya Concept of Education, The
22. Positive Background of the Ancient Hindus.
23. Place of Bhava in Music.
24. Place of Kriti in Karnatak Music.
25. Research in Music
26. Science and Philosophy.
- 27.\* Science of Music.
- 28.\* Seats of Karnatak Music—Vijayanagaram
29. Theories of Gravitation—Dr. J.V. Narlekar.
30. Thyagaraja—The Nada Yogi.

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\*Radio Broadcasts.

*Articles in Telugu-appended in Telugu Section.*

## Articles by Prof. Vissa Appa Rao in the Journal\* of Madras Music Academy

**\*Years 1931 to 1966 (Nearly 25 articles)**

Includes also BIODATA of Prof. Vissa Appa Rao

<https://musicacademymadras.in/musicacademylibrary/index.php>

[http://www.musicacademymadras.in/article\\_keyword/article\\_keyword\\_index\\_04.php](http://www.musicacademymadras.in/article_keyword/article_keyword_index_04.php)

0672	Flute -Principles Of Sound Production	The Flute And Its Theory	Appa Rao Pantulu Garu	2-7	1931	III	JMA
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[http://www.musicacademymadras.in/article\\_keyword/article\\_keyword\\_index\\_07---.php](http://www.musicacademymadras.in/article_keyword/article_keyword_index_07---.php)

1289	Kshetrajna - Life History	Kshetrajna	Vissa Appa Rao	110-129	1950	XXI	JMA
1290	Kshetrajna Life In His Padas:Interprtatn	Kshetrajna	Vissa Appa Rao	110-129	1950	XXI	JMA
1296	Kshetravya Pada In Notation	A Pada Of Kshetravya In Ghanta, Jhampa	Vissa Apparao, Manchala Jaganatha-Ed.	78-79	1945	XVI	JMA
1298	Kshetravya Padas In Mss	A Note On The Srngara Rasa Manjari	Vissa Appa Rao	41-44	1945	XVI	JMA
1344	Lankavana Sutra - Reference To Music	A Note On A Musical Reference In The Lankavana Sutra - A Mahayana Text Of The First Century	Vissa Appa Rao	37-38	1945	XVI	JMA

[http://www.musicacademymadras.in/article\\_keyword/article\\_keyword\\_index\\_07.php](http://www.musicacademymadras.in/article_keyword/article_keyword_index_07.php)

**Notes by Prof. Vissa Appa Rao**

1291	Kshetravya	Notes & Comments	173-176	1933	IV	JMA
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[http://www.musicacademymadras.in/article\\_keyword/article\\_keyword\\_index\\_08.php](http://www.musicacademymadras.in/article_keyword/article_keyword_index_08.php)

1570	Mss Of Raga Tala Cintamani In Libraries	A Note On The Raga Tala Cintamani-An Un Published Telugu Work Written Nearly 250 Years Back	Vissa Appa Rao	39-40	1945	XVI	JMA
1574	Mss On Music From Vizianagaram	The Vizianagaram Music Manuscripts	Vissa Appa Rao	153-165	1952	XXIII	JMA



Page 49 of Year 1959 Magazine Issue - Citation to Prof. Vissa Appa Rao.pdf



#### 4. Prof. Vissa Appa Rao's Articles in Telugu -1

## అప్పారావుగారి వ్యాసములు

- \*1. అరుదైన అముద్రితములైన త్యాగరాజ కీర్తనల సమీక్ష
2. ఆధునిక శబ్ద శాస్త్రరీత్యా కట్టెడి భవనములు
3. ఆంధ్రదేశమున సంగీతము యొక్క పరిణామము
4. ఆంధ్రుల నాట్యకళ, కూచిపూడి కళావైభవము
5. ఆనాటి సంగీత కచేరీలు
- \*6. ఉన్నత విద్యా లక్ష్యము
7. ఐన్‌స్టీన్ మహాశయుడు
- \*8. కర్ణాటక సంగీతము, పాశ్చాత్య సంగీత ప్రభావము
- \*9. షేత్రయ్య
10. షేత్రయ్య పదముల నాట్యానుకూలత
11. చెవి
12. జయంత్ విష్ణు నర్తకర్
- \*13. జీవితము, నేను
- \*14. త్యాగరాజస్వామి
15. త్యాగరాజస్వామి, నాదయోగి
16. త్యాగరాజు-భక్తి
17. త్యాగరాజుని ఆత్మసందేశము
18. తెనుగు పద సాహిత్యము
19. తంబురా శ్రుతి, దాని ప్రాశస్త్యము
20. ద్వావింశతి శ్రుతులు
21. దీక్షితార్ కృతి-త్యాగరాజయోగ వైభవం సదాశ్రయామి-వివరణ
22. నాట్యకళ-దాని పరమార్థము
23. నాడీ గ్రంథములు
- \*24. పదములు, జావళులు
25. పరిణామవాదము
26. పంచాంగ సంస్కరణ
27. పాండవాజ్ఞాతవాస వత్సరవ్యాప్తి నిర్ణయము

## List of Articles on Music and Dance by Prof.Vissa Appa Rao

### **A. Articles from Vyasavali, 1956 (Telugu)**

DLI ScribD <https://www.scribd.com>

<https://archive.org/details/in.ernet.dli.2015.387709>

**వ్యాసావళి** by [విస్సా అప్పారావు](#)

Publication date: [1956](#) (242 pages)

Collection: [digitallibraryindia](#); [JaiGyan](#)

Language: [Telugu](#)

Book Source: [Digital Library of India Item 2015.387709](#)

<https://ia801609.us.archive.org/28/items/in.ernet.dli.2015.387709/2015.387709.Vyasavali.pdf>

1. Kshetrappa\* (ps.100-111)
2. Tyagarajaswamy\* (ps.112-120)
3. Tyagarajuni Adhyatmika Sandesamu (ps.121-130)
4. Andhrula Natyakala – Kuchipudi Kalavaibhavamamu (ps.131-146)
5. Marga –Desi Sangitamaulu\* (Classical and Popular Music) (ps.147-159)
6. Natyakala – Dani Paramarthamu (ps.160-176)

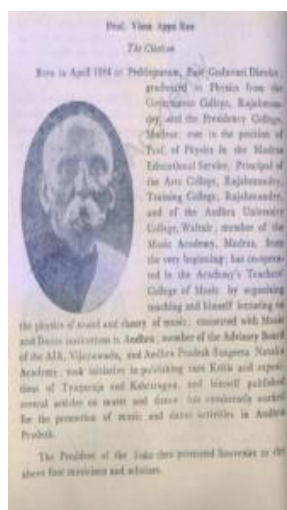
\*Radio Talks (All India Radio, Vijayawada)

<https://www.academia.edu/login>

**Vyasavali** in Telugu by Prof.Vissa Appa Rao (1884 – 1966) is a collection of his Essays and Radio talks dealing with the Subjects: Search for Truth; Do we need Goodness without Violence?; Grooming a Good Citizen; Radar; What is the Age of the Universe?; Reform of Hindu Calendar; Aim of Higher Education; Raman Effect; Explaining Modern Science Developments in Simple Language to Educate the Common Man; Classical Music Composers Kshetrappa, and Tyagaraja; The Spiritual Message of Tyagaraja; Natyakala of Andhra and Kuchipudi Art Splendour; Marga and Desi Musical Developments; Natyakala and its Paramardhamu; Determination of Pandava Ajnata Vasa Vatsaramu; Theory of Evolution; Vighneswara (deity) and his Significance; Naadi Granthas (Palm Leaf Manuscripts).

### **Music Academy Madras Citation in TTK Award to Prof.Vissa Appa Rao~**

Vissa Appa Rao - Biodata: From - Proceedings of The 32nd Music Conference: 48A-48E:1959 Vol.30, 3449.



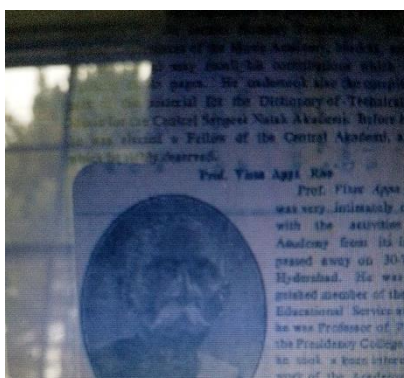
**“Born in April 1884, in Peddapuram, East Godavari District, Graduated in Physics from the Government College, Rajahmundry and the Presidency College, Madras rose in the position of Prof. of Physics in the Madras Educational Service, Principal of the Rajahmundry Government College and of the Andhra University College, Waltair, and Member of the Music Academy, Madras from the very beginning, has cooperated in the Academy’s Teachers College of Music, by organising Teaching and himself on the Physics of Sound and Theory of Music and Concerned with Music and Dance Institutions in Andhra, Member of the Music Advisory Board, AIR Vijayawada, and Andhra Pradesh Sangit Natak Academy, and initiating in Publishing of Kritis and Ragas of Tyagaraja and Kshetragna and himself Published several Articles on Music and Dance and extensively worked for the Promotion of Music and Dance Activities in Andhra Pradesh.”**

~ <https://musicacademymadras.in/awards/ttk-award/>  
[http://www.musicacademymadras.in/article\\_keyword/article\\_keyword\\_index\\_18.php](http://www.musicacademymadras.in/article_keyword/article_keyword_index_18.php)  
[http://issuu.com/themusicacademy/docs/1959\\_Page49](http://issuu.com/themusicacademy/docs/1959_Page49)  
[http://www.musicacademymadras.in/musicians\\_musicologists.php](http://www.musicacademymadras.in/musicians_musicologists.php)  
<https://musicacademymadras.in/musicacademylibrary/index.php>  
 The Journal of the Madras Music Academy, Vol.XXX, Page 48D

#### **4. Prof. Vissa Appa Rao - In Memoriam: Madras Music Academy 37<sup>th</sup> Conference, 1966<sup>m</sup>**

<sup>m</sup> <https://musicacademymadras.in/musicacademylibrary/index.php> -  
 The Journal of the Madras Music Academy, Vol.37\_1966.pdf (Page 224)

**“Prof. Vissa Appa Rao who was very intimately connected with the Activities of the Academy, from its inception passed away on 30-07-1966 at Hyderabad. He was a distinguished Member of the Madras Educational Service and when he was Professor of Physics in the Presidency College, Madras he took a keen interest in the work of the Academy and its Teachers College of Music where he used to take Classes to the students on the Physics of Music. After Retirement, he devoted himself wholly to the developing musical activity and publication work in Andhra Pradesh. Several of pages of this grateful to him for bearing on Music for**



**his Contributions Appeared in the Journal. The Academy is particularly collecting Manuscript Materials Research and Publication.”**



#### 4. Prof. Vissa Appa Rao's Articles in Telugu - 2

అప్పారావురారి వ్యాసం

28. భారత ప్రాచీన నృత్య రీతులు
29. భౌతిక శాస్త్రము, తత్వజ్ఞానము
- \*30. మార్గదేశి సంగీతములు
- \*31. మొదటి ఆంధ్ర వాగ్గేయకారులు
- \*32. మంచి పౌరునిగా తయారు చేయుట
33. రామకృష్ణ పరమహంస
34. రామదాసు, త్యాగరాజు
35. రామన్ ఇఫెక్టు
- \*36. రేడారు
37. వాద్యముల తంత్రులు కంపించు పద్ధతులు
38. విఘ్నేశ్వరుడు
39. విశ్వము నిర్మాణమై ఎంతకాలమైనది ?
40. విశ్వ శిల్పము
41. విజయనగర సంస్థానమందలి వివిధ గ్రంథములు
42. శక్తిలేని మంచితనము కావలెనా ?
- \*43. శాస్త్ర పరిశోధనా సమీక్ష
44. శాస్త్రీయ సంగీత రసము నాస్వాదించు రీతి
- \*45. సత్యాన్వేషణ
46. సారంగపాణి, వేణుగోపాల పదకర్త
47. సంగీత పరిణామము-ఆంధ్రదేశము
- \*48. సంగీత నృత్య సాహిత్యముల అన్యోన్యశ్రయత
49. సంగీత రసగ్రహణము
50. స్వరపేటిక
51. శ్రీ గౌతమీవిద్యా పీఠము-సంగీత శాఖా విద్యత్సభల ప్రారంభోపన్యాసము
52. శ్రీ త్యాగరాజ జయంతి మహోత్సవములు
- \*53. శ్రీ ముత్తుస్వామి దీక్షితులవారు
54. శృంగార రసమంజరి
- \* ఈ గుర్తు గలవి రేడియో ఉపన్యాసములు (15)  
[ఆంగ్ల విభాగంలో 75 పుట తరువాతిదిగా దీనిని చదువుకోవలెను—సం॥]



## **5. ARTICLES IN ENGLISH (Complete Text)**

- 5.1 A Little Known Treasure [Indian Music Journal, Book 2, 1964]**
- 5.2 In Andhra then and now (History of Gurukula)  
(Indian Music Journal, Book No.3, 1965)**
- 5.3 Arohana – Avarohana Kala Swaras [The Journal of Madras Music Academy –Vol.xxiv]**
- 5.4 Bhadrachala Ramadas [Krishna Gana Samaj Souvenir –  
April 1963]**
- 5.5 Evolution of Indian Music – The Classical Tradition [September 18, 1955]**
- 5.6 The Evolution of Raga in Carnatic Music**
- 5.7 The Flute and its Theory**
- 5.8 The Place of Bhava in Music**
- 5.9 The Positive Back-ground of the Hindus [From Archana – 1984]**
- 5.10 The Genius of Tyagaraja**
- 5.11 Looking Back on Educational Field: Then and Now [From Archana -1984]**
- 5.12 Rasvidya Velayinchina Siddha Nagarjunudu: in Telugu [From Archana -1984]**

**5.1 A Little Known Treasure [Indian Music Journal, Book 2, 1964]**



## A little known treasure

(2)

VISSA APPA RAO

*Adhyātma Rāmāyaṇa Kīrtanam-s*, composed by Munipalle Subrahmaṇya Kavi in the 18th century, are a treasure in *Bhakti gītā*. The author was a contemporary of Damera Timmappa Nāiḍu, Zamindār of Kālahasti. He was the State Musician, Poet and the Guru of Timmappa Nāiḍu, his son and grandson, in the first half of the eighteenth century. Subrahmaṇya Kavi was a great scholar well versed in Sanskrit and Telugu literatures, music and dance, *alaṅkāra śāstra* and *Vedānta*.

*Rāmāyaṇa*, the story of Rāma, has two aspects—the worldly and the spiritual. Vālmiki depicted Rāma and Sītā as ordinary mortals with extraordinary and exemplary characteristics. The spiritual aspect of the story of Rāma was written in Sanskrit and has called *Adhyātma Rāmāyaṇa*. This in essence is the philosophic aspect of *Rāmāvatāra* explained to Ānjaneya by Rāma and Sītā in *Sītārāma-Ānjaneyam*. In *Adhyātma Rāmāyaṇa* Rāma is the Supreme God—*Parabrahma*—and Sītā is *Prakṛiti-Ādi Śakti-Māya*. Sītā that was taken away by Rāvaṇa was Māyā Sītā, so also the Sītā that entered the purifying fire in Laṅkā after the death of Rāvaṇa. These and other details of the story were depicted in the one hundred and four *kīrtana-s* composed by Subrahmaṇya Kavi. The story was narrated by Parameśvara to Pārvatī in answer to certain doubts raised by her in regard to the truth of the incarnation of Rāma.

Each composition consists of *palavi*, *anupallavi* and seven or eight long *charaṇa-s* which contain seven or eight lines in each. The last line of each *charaṇa* was composed in a quicker tempo and this adds life to the composition. The language—Telugu—used was full of *Śabda alaṅkāra-s*, and rhymes which make the recitation musical and exhilarating. The compositions are highly devotional and we are carried away as we recite them. It must be said that these compositions have a unique style and technique of their own *Sāhitya* predominates and music is subordinated.

Nearly sixty *rakti* Rāga-s in use in the eighteenth century were used in the compositions. Rare Rāga-s like *Pūrvi*, *Gumma-kāmbhoji*, *Yamunā*, *Lalita-panchamī*, *Deśiya-devagāndhāra*, *Mangata-kausika*, *Kannḍa-gaula* were employed. *Ādi* (60) *Aṭa* (30) *Jhampe* (8) *Triṭuṭa* (3) and *Rūpaka* (3) *tāla-s* were used. One variety—*Rūpaka-chāpu*—of *Rūpaka* was used in a composition.

The compositions were dedicated to Śeṣhāchalapati—Lord Veṅkaṭeśvara. These *kīrtana-s* were learnt by all house-holders in the coastal Āndhra particularly by women. Till recently they were sung with great zeal at *Bhajana-kūṭam-s* along with *Rāmadās kīrtana-s*, *tarangam-s* and *aṣṭa padi-s*. These *kīrtana-s* were not much known in the South and the musicians are more or less ignorant about them and perhaps very few are



now left, even in the coastal Āndhra, who can sing at least a few of them. These *kirtana-s* have a great place in *Bhakti gītam*. It would be a pity if they go out of use. They must be revived. The All India Radio Stations in Vijayawada, Hyderabad and Madras must take up this important duty.

Two years back these *kīrtana-s*—sixty one of them—were printed in notation by the Āndhra Gāna Kalā Parishat of Rājahmundry and they were all purchased by the Āndhra Pradesh Sangita Nāṭaka Akādemi, Hyderabad. I hope and believe that musicians and music lovers restore these *kīrtana-s* to their exalted place which they occupied.

To illustrate the literary style of the compositions an example is given below. (Note the rhyme on *ri* and *lu*)

*Pallavi*                      *Cheri vinave śouri cheritamu Gāuri sukumāri girivara kumāri*

*Anu pallavi:*              *Vārijākshuḍantatanu Sri Mīri*  
*Vedkatō nayodhyaku gōri*  
*Pōvudarilō nṛipa vairi etc.,*

*Charaṇa :*

*Benduvanti villu naḍimiki*  
*Renduchedi pelli, poṅgedu*  
*Konda nenaya jellu nā villu*  
*Dandi vairulaku mullu—etc.*

This relates to the meeting of Rāma and Paraśurāma while Rāma was just returning to Ayōdhya after winning the hand of Sītā.



## 5.2 In Andhra then and now (History of Gurukula) (Indian Music Journal, Book No.3, 1965)

1965 No. 3. Book.

INDIAN MUSIC JOURNAL  
Part No. 3  
1965

MUSIC EDUCATION

and tāla-s. This can be easily overcome if we adopt a course somewhat on the following lines:

- (i) There should be a proper balance between practice and theory. Syllabi and training could be so framed for advanced students with separate facilities for music pedagogy and musicology, the courses up to graduate classes being common.
- (ii) Admitting smaller number of students so that within the same period of class each student could be individually attended to.
- (iii) The syllabus should be small till the under-graduate classes. A few rāga-s with prominent patterns—those of *Bhairavī*, *Yaman*, *Tōḍi*, *Bhīmpalāsī*, *Sāraṅg*, *Kēdār*, *Nāṭ*, etc—could be introduced in the beginning and a very intensive training in only these given. This would enable the student to develop a good command of the *gāyaki*. For the post-graduate the syllabi could cover a larger repertoire. This would enable a conscientious teacher to train students comparable in technical equipment to those who had training in the system of *guru-śishya-paramparā*.

—COURTESY: GANDHARVA MAHA VIDYALAYA MANDAL

Statement about ownership and other particulars about newspaper INDIAN MUSIC JOURNAL to be published in the first issue every year after last day of February.

FORM IV  
(See Rule 8)

1. Place of publication	...	B-120, Pandara Road, New Delhi-11
2. Periodicity of its publication	...	Half-yearly
3. Printer's Name	...	V. V. Sadagopan
Nationality	...	Indian
Address	...	38/1, Probyn Road, Delhi-7.
4. Publisher's Name	...	V. V. Sadagopan
Nationality	...	Indian
Address	...	38/1, Probyn Road, Delhi-7.
5. Editor's Name	...	V. V. Sadagopan
Nationality	...	Indian
Address	...	38/1, Probyn Road, Delhi-7.
6. Names and addresses of individuals who own the newspaper and partners or shareholders holding more than one percent of the total capital	DELHI SANGITA SAMAJ (Registered Society)	

I, V. V. Sadagopan, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Dated 24-4-1965

(Sd) Sadagopan  
Signature of Publisher



# In Andhra then and now

VISSA APPA RAO

## A. HISTORY OF GURUKULA IN ĀNDHRA

**Vizianagaram School of Music :** Political conditions in the area around Vizianagaram settled down after the battle of Padmanābham, in 1794. Vizianagaram Samsthānam had a peaceful and prosperous time. Pusapati Nārāyaṇa Gajapati, the ruling prince, invited men of culture—poets, pandits, musicians, etc., to his *darbār* and organized the different branches of cultural studies on a permanent basis.

Nārāyaṇa Gajapati Rājā invited Veena Peda Gurāchāryulu vāru, a talented musician of Tanjore, in the beginning of the nineteenth century. Vidvān Peda Gurāchāryulu was a great *vaiṇika*. He established a school of Karnāṭak Music.

Besides Vizianagaram, Bobbili and Madgole Samsthānam-s had been at that time continuing the older traditions prevalent in Āndhra. After the practice of *Sarali-s*, *Jhaṇṭa-s* and *Alaṅkāram-s*, a number of *Gītam-s* were practised. Rāgam, tānam and pallavi were most important. Almost all the Vidvān-s were *Vaiṇika-s*. Music tradition was carried over from father to son and there were a number of such families in the three Samsthānam-s—Gurāchāryulu vāru, Patrāyani vāru, Vasa vāru, Durvāsulavāru, Śisṭu vāru, etc. The older families did not follow the 72 Mēlakarta system but followed the older one of 14 rāga system. Śrī rāga belonged to Bhairavi Mēla. The ārōhaṇa-avarōhaṇa of some rāga-s was different from what we have now. The *Kṛiti Sampradāya* of Śrī Tyāgarāja, Dīkshitar and Śyāma Śāstri was not known to them during the period 1800-1850 A.D. *Aṣṭa-padi-s*, *Taraṅgam-s*, *Adhyātma Rāmāyaṇa Kīrtana-s* were the compositions that were learnt. The Vidvān-s used to compose gītam-s and tānam-s in rare rāga-s and also the old type of compositions like *Jakkina Daruvu*, *Salām Daruvu* and *Svara Pallavi*.

Music was chiefly intended for the royalty, the high officials and the distinguished and learned persons. Seekers of music outside the reputed families were undergoing *Gurukulavāsam* and learning classical, śāstraic music, in one of those families for ten years or more. Emphasis was on *tānam*, *rāgam* and *pallavi*. The proficiency of a Vidvān was judged by his ability to demonstrate his skill in the 21 *tānam-s* known. There were different methods of exciting the *Vīṇā* strings—*jōḍu mīṭṭu*, *taḍa mīṭṭu* and *maṭṭa mīṭṭu*. Vidvān-s in different families were specialising in some of these techniques. Playing *shatkālam* was the aim of a *vīṇā* Vidvān. *Ghaṇam* style of *Vīṇā* play was a rare gift. It may be safely stated that proficiency was judged by the display of technique and ability to demonstrate *pallavi-s* in intricate tāla-s rather than by the elevating type of *rasa* and *bhāva*. It might be mentioned that Bobbili Kēsavaiah who met Tyāgarāja was a typical music expert of this tradition.



Peda Gurāchāryulu vāru passed away in 1822 and the Karnāṭak tradition of the 72-Mēḷakarta scheme slowly gained ground. Compositions in all the Mēḷakarta-s were composed by the next generation of Vidvān-s.

Rājā Vijaya Rāma Gajapati, who succeeded his father Nārāyaṇa Gajapati Rājā, married a north Indian Rajput princess of a principality near Vāraṇāsi. This intermingling of North and South resulted in the introduction of Hindustāni Music into the Vizianagaram Darbār. Ustād Mah-booth Khān was brought from Vāraṇāsi. He established a school of Hindustāni music side by side with that of the Karnāṭak Music. He was a noted *sitār* player. Karnāṭak Music vidvān-s like Durvāsula Sūryanārāyaṇa Sōmayājulu practised both systems to a high degree of proficiency. A comparative study of the two systems was systematically conducted and the beauties and special features of the Hindustāni music which could be introduced in the Karnāṭak music were adopted and a graceful *bāṇi* or style was brought out. This broadened the musical outlook. There are a number of manuscripts which give details of all the styles and varieties of Hindustāni music which were taught in those days—*drupad-s*, *khyāl-s*, *tarāna-s*, *tillāna-s*, *ṭhumri-s*, etc., and *alaṅkāra-s*; *ārōhaṇa* and *avarōhaṇa* of a good number of Hindustāni rāga-s; *tāla-s*; *ṭappa-s* *khamata-s*, *bhajan-s* and *rekta-s*.

In the last and best phase of music development at Vizianagaram Darbār Pusapati Ānanda Gajapati Māhārāj was the central and inspiring genius. He was a great *Vīṇā* and *Sitār* player, an expert in both the systems of music and highly cultured prince who had learnt French, Latin, Urdu, Sanskrit, besides English and Telugu. He sent out Vidvān-s like Kālikokka Kāmarāju gāru to Tanjore to learn new developments in Karnāṭak music. This Vidvān was a skilled violinist who introduced the violin for the first time into the Darbār. He brought back with him from the South a number of Tyāgarāja's *kṛiti-s*. Tatchūr Śingarāchāri brothers were invited by Ānanda Gajapati and they were at Vizianagaram for a number of years. Great violin Vidvān-s that they were, they made the instrument more popular. They were responsible for introducing pure Karnāṭak Music style and a great number of compositions of the Musical Trinity. Thus Karnāṭak Music reached a high-water mark.

Side by side, the old tradition of the intricate technique of *Vīṇā* play, *Pallavi* and *Tāḷa-prastāra* were also practised. Ānanda Gajapati Māhārāj used to set difficult technical problems for the Vidvān-s to solve. In this connection the name of *Vīṇā* Venkaṭa Ramaṇadās, the great grandson of Peda Gurāchāryulu has to be specially mentioned. He was a master in the technique of *Vīṇā* with his dynamic handling of the instrument. By keeping the finger on one fret he could produce higher swaras—finger on the *ga* fret and production of *ga*, *ma* and *pa*, finger on *pa* fret and production of *svara-s* *pa*, *da* and *ni*. In this way he could produce the continuous melodious effect as in vocal music. He had the gift of playing on the *Vīṇā* in the *Ghana* style. He was particularly the master of *shatkāla* play. He was practising *Vīṇā* every day for hours together during the early hours of the morning.

Ānanda Gajapati Māhārāj studied Western Music. He brought an expert to play on the Piano and employed permanently Italian and English band troupes. He was discussing with the darbār vidvāns the comparative merits of the Western and Indian systems of music. He was curious whether



Karnāṭak musicians could compose music like Beethoven's pastorals—sound echoing sense. His vidvān-s took up the challenge and composed what was known as "Maṇḍūka śabdam" which, when played on the Viṇā, suggested the various stages of the monsoon—wind, rain, drenching, calm, and frogs producing their characteristic sounds after very heavy rains.

After the death of Ānanda Gajapathi Mahārāj in 1897 there was a lull and afterwards, the excellence of Karanāṭak Music was raised to dizzy heights by Saṅgita Kālanidhi, Padamśrī Dr. Dvaram Venkataswamy Naidu, the wizard violonist. He was at home equally in the Karnāṭak, Hindustāni and Western styles of music. His music was inspired and soul-stirring.

**Pithāpuram Samsthānam:** *A product of Bobbili School of Music.*

Tumurāda Sangamēśvara Śāstry, the Āsthāna Vidvān of Pithāpuram darbār was a first rate Jewel. Melodious music flowed out of his Viṇā in torrents, elevating the listeners to unknown realms of ecstasy. Sangamēśvara Śāstry sang mostly for his own joy and ānanda. He could experience the ōṅkāra nāda of the music in his inner depths after hours of intense sādhanā on the viṇā. He was a Nādayōgi.

Vidvān Susarla Dakshinā Mūrti Śāstry of Peda Kallepalli, a village in the Kṛishṇa district, went to Tiruvayyār round about 1880 A.D. and learnt Karnāṭak music in *Gurukulavāsam* for a number of years under Vidvān Akumadugula Veṅkaṭa Subbaiah gāru, a first cousin of Śrī Tyāgarāja Svāmi. At that time the great Śarabha Śāstri was a co-disciple.

After return he established a *Gurukula* in his village, gave free boarding and lodging and taught Karnāṭak music for nearly three decades, 1887-1917. Vidvān Pārūpalli Rāmakṛishṇayya Pantulu was one of his famous disciples who in his own turn trained a number of musicians—Vidvān Chilakalapūdi Venkatēśvara Śarma, Sri Pitchi Hari, Sri Bāla Muraḷi Kṛishṇa and others.

I indicated so far the history of the teaching of music in Āndhra under the *Gurukula* system. Under this system only it is possible to master intricacies and achieve precision in the art of music. Devotion to the *Guru*, service to him whole-time without any outside distractions and imbibing what the *Guru* is pleased to teach at his own will and pleasure, without restrictions of time or number of hours, and observing the *Vidvat-gōshṭi* that might be going on in the *Gurukulam* are some of the essential factors that go to produce a real vidvān. Unless every item of music is learnt directly from the *Guru*, the rendering of it can never be perfect and traditionally correct. Incidentally the *Guru* will be elucidating many subtle points in connection with many items of music. Above all continuous practice for a number of years with undivided attention under the guidance of the *Guru* is most important. Perfect health, good behaviour and habits can be acquired during these years of disciplined life.

## B. MODERN CONDITIONS

For various reasons the *Gurukula* system has been disappearing and standards in music are slowly declining. It must however be recognized that conditions have very much changed. This is a democratic age. Music



*Vidvāns*

From among the rest that pass out of the music colleges a few have to be selected for a further course of intense study of music. Scholarships must be awarded to these selected students for at least two years and they must be attached to a top-rank Vidvān. Thus we can preserve the quality and standard of tradition and produce Vidvān-s that can be favourably compared with those of the *Gurukula* system.

*Science of Music*

We are now living in a modernized scientific age. Traditional culture and art are being re-established on a firmer and rational basis. Interest in music has increased. Everyone wants to know the why of many interesting aspects of music.

*Acoustics*

The scientific study of music has been much advanced. Many appliances are widely used and enjoyed by all of us—gramophone disc recording, tape-recording, microphone, loud-speaker, radio, etc. Auditoria—acoustically perfect concert halls—are being constructed. It is therefore necessary that under-graduates, graduates and music teachers, in particular, should be familiar with the principles applied.

Apart from this, acoustics is very useful in teaching the theory of music. Explanatory experimental demonstration is objective and can always be repeated. The traditional system of explanation is subjective and standards of judgements vary with the sensitiveness of the ear. Matters like *śruti*-s and their derivation are more or less done by rule-of-thumb. Fundamental concepts like *śruti*, *svara* and *antaram* are rationally and accurately defined by acoustic experiments. The difference between musical sounds and noise, the basic properties of musical sounds, the meaning of harmony and melody, the grades in harmony—*vādi*, *samvādi*, *anuvādi* and *vivādi*—how a *Vīṇā* string can vibrate in more than one mode at the same time producing harmonical notes, etc., can be brought home visibly and objectively to the students.

Further, the action of the sounding board, the theory of the play of the bow on the violin string, the theory of the flute, etc., can be explained. The objective nature of *gamaka*-s, how a particular *svara* in a *rāga* varies slightly in the various *svara* combinations, how a *svara*, say *antara gāndhāra*, is different in pitch in different *rāga*-s and what constitutes the character and individuality of a *rāga* can be studied. Many of the subtle points which are taught traditionally by the *Guru* can be put to acoustic test and a good amount of research can be undertaken. Such a study will enlighten the intellectual basis of the appeal of correct musical rendering—of *bhāva* and *rasa*.

All this requires a good musician trained traditionally and who must also be an advanced student of physics trained in an acoustic laboratory. He has to be provided with an equipped laboratory in a university, say the *Āndhra* University, and has to be employed by it. He has to be sent out after finishing his training to the various music colleges to teach acoustics with experimental demonstrations. The syllabuses of the diploma course



in music, the P.U.C. and the B.A. courses already contain some fundamentals of acoustics. I am afraid the syllabuses are not properly taught for want of trained teachers.

#### *Post-Graduate Course*

Finally, when the specially trained Physics Hons. graduate and Music Vidvān has established himself in the University, a post-graduate course in music has to be organized. Post-graduates in music have to be employed in music colleges. Thus in the course of a few years the standards in music will very much improve.

In view of all this it is necessary to revise the syllabuses in acoustics, in the B.A. course and Diploma course. Teachers must have a special course of lectures on the methods of teaching cultural and scientific aspects of music. They must be able to handle apparatus and demonstrate.

Vidvān-s would have the benefit of acoustics-teaching in music colleges and would have a general grasp of the scientific basis of music. The principal aim in music education of Vidvān-s after leaving the College and while undergoing training under a top-rank traditional Vidvān should be to make him a creative artist. A Vidvān must not only be the embodiment of all that is valuable in musical art and culture but must have a bold creative urge to improve on the tradition with due regard to the fundamental principles. He must realize that musical technique is not an end in itself but only a means to bring out the aesthetic and the spiritual appeal of the art.

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### 5.3 Arohana – Avarohana Kala Svaras [The Journal of Madras Music Academy –Vol.xxiv]

#### AROHANA AND AVAROHANA KALA SVARAS OF 94 CARNATIC RAGAS TAKEN FROM THE VIZIANAGARAM MUSIC MANUSCRIPTS

BY

Prof. VISSA APPA RAO

In Vol. XXIII of the Journal of the Madras Music Academy of 1952, I gave some details of eleven old music manuscripts of the Vizianagaram Carnatic School of Music.

I now give below a tabular statement containing the arohana and avarohana svaras for 94 Carnatic ragas along with the arohana and avarohana Kala svaras. (ri indicates higher ri and ri with a stroke at the bottom indicates lower ri. The same method is followed for all the five svaras ri ga ma dha ni).

The Kala Svaras form a unique feature of these manuscripts. The individual characteristic lakshana and sanchara of each raga is indicated by these Kala Svaras. Along with the arohana and avarohana Svaras the Kala Svaras will be very useful in the elucidation of the evolution of raga lakshanas. It is interesting to note that some ragas like Regupti, Samanta, Bhinna Panchamam, Gumma Kambhoji have gone into the background. These Kala Svaras would therefore help us to know what they were like.

No.	Raga	Arohana and Avarohana	Arohana-Avarohana Kala Svaras
1	Regupti	Sa ri ga pa dha Sa dha pa ga ri	Sa ri gaa ri ga paa ga dhaa pa Sa dhaa pa ga rii pa ga rii saa
2	Suddha Saveri	Sa ri ma pa dha Sa dha pa ma ri	Saa ri maa paa ma dhaa pa Sa dhaa pa ma rii pa ma rii sa
3	Yarakala Kambhoji	Sa ri ma pa dha Sa ni dha pa ma ga ri	Saa rii ma ga ri maa ga ri paa ma dhaa pa Sa nii dha pa ma ga ri ga rii sa paa dha pa dha saa
4	Kedaragowla	Sa ri ma pa ni Sa ni dha pa ma ga ri	Saa ni sa ri ga rii ma pa nii Sa ni dha paa ma ga rii ga rii saa
5	Kambhoji	Sa ri ga ma pa dha Sa ni dha pa ma ga ri	Saa ri gaa ma paa dha nii dha pa dha saa ni dha pa dhaa pa ma ga rii sa ri gaa ma ga rii sa nii dha pa dha saa
6	Navaroju	Pa dha ni sa ri ga ma Pa ma ga ri sa ni dha	Sa ni dha ga rii ga ma paa Ma ga ri sa nii dha pa dha nii nii sa dha ni saa
7	Sankarabharanam	Sa ri ga ma pa dha ni Sa ni dha pa ma ga ri	Sa rii gaa ma pa dha nii sa rii sa Ni sa dha pa dha maa ga rii sa ni sa dha ni saa
8	Saveri	Sa ri ma pa dha Sa ni dha pa ma ga ri	Sa ri maa pa dhaa pa dha Saa ni dha nii dhaa pa maa ga rii sa dha saa
9	Bhairavi	Sa ri ga ma pa dha ni Sa ni dha pa ma ga ri	Ga ri ga ma pa dha nii sa Nii dha pa nii dha maa ga rii sa nii dha ni rii saa
10	Pantu Varali	Sa ri ga ma pa dha ni Sa ni dha pa ma ga ri	Sa ri gaa ri ga ma pa dha nii Sa nii dha pa dha maa ga rii sa (nii) ni dha ni rii (ri) saa
11	Maruva	Sa ga ma pa ni Sa ni dha pa ma ga ri	Sa gaa ma gaa ma pa nii Sa nii dha pa ma ga ri sa nii dha pa ni rii saa
12	Ananda Bhairavi	Sa ga ri ga ma pa ni Sa ni dha pa ma ga ri	Sa ga ri ga ma paa ni sa ni nii Sa ni dha paa maa gaa ri ga ma ga rii sa
13	Kalyani	Sa ri ga ma pa dha ni Sa ni dha pa ma ga ri	Sa ri ga maa ga ri ma pa dha Nii dha ni saa ni dha paa ma ga pa maa ga rii saa
14	Mukhari	Sa ri ma pa dha Sa ni dha pa ma ga ri	Sa ri gaa rii ma pa dha saa ni dha paa Maa ga rii sa ni dha saa



15	Todi	Sa ri ga ma pa dha ni Sa ni dha pa ma ga ri	Saa ri gaa ma dhaa paa dha ma pa maa ga ma dha dha ni nii sa ni ri saa nii dha pa ma pa ma gaa rii saa
16	Bilahari	Sa ri ga pa dha Sa ni dha pa ma ga ri	Sa ri gaa pa ma ga pa dha saa ni nii saa ni dhaa pa dha maa ga ri sa ni dha saa
17	Saurashtra	Sa ri ga ma pa dha ni Sa ni dha pa ma ga ri	Sa ri gaa ma pa dha ni saa ri ni rii saa ni dha nii dha pa ma dha paa ma ga rii ga ma ga rii sa
18	Punnaga	Sa ri ga ma pa dha Ni dha pa ma ga ri sa	Ni sa ri gaa ri ga maa pa dha nii dha paa Maa gaa rii sa nii sa ri gaa ri rii saa
19	Chandrika Bhairavi	Dha ni sa ri ga ma Ga ri sa ni dha	Ni sa ri ga maa ga maa ga ri sa ni dhaa ni sa ri ni rii saa
20	Natakuranji	Sa ri ga ma pa ma dha ni Sa ni pa dha ma ga sa	Maa gaa ma ni dhaa ni pa dha ni sa ri ga maa ga Sa ri sa ni dha ni pa dha ni saa
21	Megharanji	Sa ga ma ni sa Ni ma ga ri sa	Sa maa ga ma nii ni saa ni ri sa ni ma ma ga ri gaa rii sa nii ni ssaa
22	Kuranji	Ni sa ri ga ma pa Dha pa ma ga ri sa ni	Sa ni sa ri ga ma pa dha paa maa gaa rii ga ri Sa ni nii saa
23	Kapi	Sa ri ga ma pa dha ni Sa ni pa ma ri gaa ri sa	Paa dha ni saa ni paa rii ga ma pa dha ni paa ma ri gaa ri sa ni rii saa
24	Poorvi	Sa ri ga ma pa dha ni Sa ni dha pa ma ga ri	Ga ma dhaa pa dha ni sa rii sa ni dhaa pa ma ga rii ga maa ga rii sa ni rii saa
25	Suddha Saranga	Sa ri ga ma pa dha ni Sa ni dha pa ma ga ri	Ri gaa ma pa dhaa ni sa rii sa ni dha ni sa dhaa pa ma ri ga ma pa ga rii sa
26	Kannada	Sa ga ma pa ma dha ni Sa ni dha pa ma ga ri	Ga ma dhaa ni sa dha ni sa dhaa pa ga ma pa ga ma rii sa

No	Raga	Arohana and Avarohana	Arohana Avarohana Kala Svaras
38	Malahari	Sa ri ma pa dha Sa dha pa ma ga ri sa	Sa ri maa ga rii maa paa dha sa dhaa pa maa gaa rii sa dha rii sa
39	Andhali	Ri sa ri gaa ma ri ma pa ni Sa ni pa ma ri ga ma rii sa	Ri sa ri gga maa ri ga maa rri ma pa nii saa nii paa maa rii ga maa rii sa ni ri sa
40	Nata	Sa ri ga ma pa dha ni Sa ni pa ma ri sa	Rii sa ni pa dha ni sa ri ga maa pa nii sa ni pa ma rii sa ri sa nii ssaa saa
41	Padi	Sa ri ma pa ni Sa ni pa dha pa ma ri sa	Pa dha saa ni pa nii saa ri ga ma pa nii sa ni pa ri nii sa paa ga paa ma ri sa nii sa sa
42	Desakshi	Sa ri ma ga pa dha sa Ni dha pa ma ga ri sa	Ri sa sa ni dha paa ma gaa pa dha saa ni paa dha saa
43	Vasanta	Sa ga ri ga ma pa dha ni Sa ni dha pa dha ni dha ma ga ri ga sa	Sa ri gaa ma paa ma dhaa ni saa nii dha paa maa gaa pa maa saa ni dha maa gaa rii ssa
44	Salaga Bhairavi	Sa ri ga ma sa pa Pa sa ni dha pa ma ga ri sa	Ga ri saa nii dha saa ri ga maa paa dha saa ni dha pa ma ga ri sa
45	Gaulipantu	Sa ri ma pa ni Sa ni dha pa ma ga ri	Sa ri ga ri maa pa nii saa ni dhaa paa ma ga rii ga ri sa
46	Kedara	Sa ma ga ma pa ni Sa ni pa ma ga ri sa	Pa ni sa ri sa maa maa ga ma pa nii sa ni pa ma ga ri sa
47	Bhauli	Sa ri ga pa dha Sa ni sa nii dha pa ga ri	Sa ri gaa pa dha saa ri ri ga ri ri sa ni dha pa ga dha pa ga ri saa

48	Sama	Sa ri ma pa dha sa	Dha saa ri ma ga ri maa pa dha saa dha
49	Purva Gaula	Dha pa ma ga ma ga ri sa	pa ma ga ri sa dha saa
50	Sindhu Megha Dhavani	Sa ri ma ga ri ga ma pa dha	Maa ga ri sa ga ri sa ni dha pa ma dhaa saa rii
51	Vasanta Bhairavi	Sa ni sa dha pa ma ga ri sa	gaa ma pa ma gaa rii saa ni dhaa paa sa saa
52	Nagadhvani	Ri ga ma pa dha ni	Dhaa nii pa dha saa nii dhaa paa maa gaa ma ga ma
53	Riti Gaula	Sa dha ni pa dha ma	nii dha ni dha pa maa gaa ri sa ri ga ma pa dha ni saa
54	Purva Bhairavi	nii dha pa ma ga ri sa	Saa nii dha nii saa rii saa maa ga ma dhaa
55	Kannada Gaula	Sa ri sa ga ma dha ni	ni sa nii dhaa maa pa ma ga rii saa
56	Nata Narayani	Sa ni dha ma pa ma ga ri sa	Saa ni sa maa ga ma paa ni dha ni saa nii
57	Malava Sri	Sa ma ga ma pa ni dha ni	dha ni paa dha ma ga ma ri ga saa ni nii saa
		Sa ni dha ma ga ma ri	Pa ma ga ri gaa ma   ga ri sa ni pa ni saa ga ri ga
		ga sa	ma ni dha ma ga ma pa dha pa ma ga ri saa
		Sa ga ri ga ma ni dha ni	Sa gaa ma pa ni dha ni saa nii dhaa paa
		Sa ni dha ma ga ma pa	maa pa gaa rii saa
		dha pa ma ga ri sa	Saa sa nni ni sa ga ma pa ma ga maa ni dha
		Sa ga ma pa dha ni	ni sa nii dhaa ma pa ma gaa saa
		Sa ni dha pa ma pa ga ri sa	Sa dha sa ri ma pa dha paa ma ga ga rii sa
		Sa ga ma dha ni	ri ma ga ri sa ni dha saa
		Sa ni dha ni sa ni dha	Sa ga ma pa ni dha ni sa ma ga sa sa ni
		ma ga sa ga rii sa	dha ma ga sa ni dha paa ma paa paa
		Sa ni dha sa ri ma pa dha	
		Sa dha pa ma ga ri sa	
		Sa ga ma ni dha ni	
		Sa ni dha pa ni dha ma	
		ga sa	

No.	Raga	Arohana and Avarohana	Arohana, Avarohana Kala Svaras
58	Vegavahini	Sa ni dha pa dha ni sa	Sa ma ga ma ri ga ma pa ni dha ni saa pa dha nii
59	Gundrakriya	Ri ga ma pa ma ga ri sa	dha pa maa gaa rii saa
60	Jayantisayana	Sa ni dha pa ni pa dha sa	Saa paa pa dha pa dha saa ni dha pa ma ga maa
61	Ardradesi	Ri ma ga ma ga ri sa	ga rii ma ga ri saa
62	Saranga Nata I	Sa ni pa dha ni sa	Rii ga ma paa dha ni saa ni pa dha ni pa ma rii
63	Salaga Nata II	Ri ga ma pa ma ri ga ma	ga ma rii saa
64	Manirangu	rii sa	Saa dhaa pa dha saa   sa dha ni sa ri ga maa dhaa
65	Punnaga Varali	Sa dha pa dha ni sa	pa ma ga ri maa gaa ri sa
66	Hijji	Dha sa ri ma pa dha pa	Dha pa dha saa rii sa ri maa pa dha pa ma ga
		ma ga ri sa	rii pa ma ga ri sa ni saa
		Sa ri ma pa ni	Rii ga ri sa ni pa dha pa ma ga ri ma pa ma ga
		Pa ma ga ri ma ri ga ri sa	ri sa
		Ni sa ri ga ma pa dha	Ni sa ri gaa ri ga ma pa dha nii dhaa paa maa gaa rii
		Nii dha pa ma ga ri sa	saa nii gaa ri rii saa
		Sa ga ma ni dha	Sa maa ga paa ma ni dha ni rii saa ni pa dha ma
		Pa dha ni sa ni dha ma ga	pa ma ga ni dha ma ga sa ni rii saa
		sa ga ri sa	
		Ga ri ga ma pa dha	Sa gaa ri gaa ma pa ma ni dhaa pa saa ni
		Ma ni dha pa ma ga ri sa	dha pa maa gaa rii sa ni dha pa ni rii saa



67	Nilambari	Sa <u>ga</u> <u>ma</u> pa <u>ni</u> sa <u>ni</u> Pa <u>ni</u> <u>dha</u> <u>ni</u> pa <u>ma</u> <u>ga</u> <u>ri</u> <u>ga</u> sa	Sa gaa ma pa nii ni saa ni dha ni paa ma ga ga maa ri ga ma pa ma ri ga ri ma gaa saa
68	Dhanyasi	Pa <u>ni</u> sa <u>ma</u> <u>ga</u> sa <u>ga</u> sa <u>ni</u> pa <u>ma</u> <u>ga</u> sa	Saa ni sa ma ga sa ni pa ni sa pa ma ga sa sa sa ni ga ga sa ma ga sa ni pa saa saa
69	Devagandhari	Sa <u>ga</u> <u>ma</u> pa <u>dha</u> pa <u>nii</u> Sa <u>ni</u> pa <u>dha</u> pa <u>ma</u> <u>ga</u> <u>ri</u> sa	Ga ma pa ni pa ni saa   ga rii saa ni saa ni dha paa ma gaa ri sa
70	Chaya Gaula	Sa <u>ri</u> <u>ma</u> <u>ga</u> <u>ma</u> pa <u>dha</u> Sa <u>dha</u> pa <u>ma</u> <u>dha</u> <u>ma</u> <u>ga</u> sa	Sa ri ma ga maa pa dha saa dha pa ma ga saa dha dha sa sa rii sa saa
71	Udayaravi Nata	Pa <u>dha</u> <u>ni</u> sa <u>ni</u> <u>dha</u> pa <u>ma</u> <u>ga</u> <u>ri</u> sa pa <u>ma</u> <u>ga</u> <u>ma</u>	Ga ri ri sa ri ga ma pa dha ni sa dha nii saa ni dha paa maa gaa ri ri ga rii saa
72	Velavali	Sa <u>ri</u> <u>ma</u> pa <u>ga</u> <u>ma</u> pa <u>dha</u> Sa <u>ni</u> <u>dha</u> pa <u>ma</u> <u>ga</u> <u>ri</u> sa	Ma gaa rii pa ma ga ri sa   nii dha pa maa pa ga ga ma ga ri sa ni dha saa
73	Abhogi	Sa <u>ri</u> <u>ma</u> dha sa <u>dha</u> <u>ma</u> (?) <u>ga</u> <u>ri</u> sa	Sa ri maa ga ri ri ma maa dha dha saa ni dha maa ga ri rli ga ri rii saa
74	Chiuna Panchamam	Sa <u>ri</u> <u>ga</u> <u>ri</u> ma pa <u>ni</u> (?) Sa <u>ni</u> <u>dha</u> <u>ma</u> ga ri sa (?)	Sa ri paa maa dha pa sa ni saa ni saa nii dha pa maa ga ri sa ni pa nii saa
75	Sriranjani	Sa <u>ri</u> <u>ga</u> <u>ma</u> dha <u>ni</u> (?) Sa <u>ni</u> <u>dha</u> <u>ma</u> ga ri sa (?)	Saa ni ga ma ga ma dhaa ni saa dhaa ni sa ri ga ri gaa maa dha ni sa ni saa
76	Ghurjari	Sa <u>ri</u> <u>ga</u> pa <u>dha</u> Sa <u>ni</u> sa dha pa <u>ma</u> <u>ga</u> <u>ri</u> sa	Saa dhaa paa dhaa ri sa ni saa ri ga paa ma ga sa ri sa ni dhaapa gaa pa dhaa sa saa
77	Nayaki	Sa <u>ri</u> <u>gaa</u> <u>ma</u> pa <u>dha</u> <u>nii</u> Sa <u>ni</u> <u>dha</u> pa <u>ma</u> <u>gaa</u> <u>rii</u> <u>gaa</u> <u>ma</u> <u>rii</u> sa	Nii sa rii paa maa pa dha ma pa dha ni rii saa

No.	Raga	Arohana and Avarohana	Arohana, Avarohana Kala Svaras
78	Balahamsa	Sa <u>ri</u> <u>ga</u> <u>ri</u> <u>ma</u> pa <u>nii</u> Sa <u>ni</u> <u>dha</u> pa <u>ma</u> <u>ga</u> <u>ri</u> <u>ga</u> <u>ma</u> pa <u>ma</u> <u>ga</u> <u>ri</u> sa	Ri ma rii sa ri sa sa ni saa ni sa ri sa rii rii ma maa ga ri ma paa nii dha pa ma pa dha ni dha pa ma ga, rii pa ma paa dha maa ga ri ga ma pa ma ga rii saa
79	Saindhavi	Sa <u>ga</u> <u>ri</u> <u>ga</u> <u>ma</u> pa <u>dha</u> <u>ni</u> Sa <u>ni</u> <u>dha</u> pa <u>dha</u> <u>ma</u> pa <u>ga</u> <u>ma</u> <u>ga</u> <u>ri</u> sa	Sa ri ga ma pa dha ni sa dha saa ni dha pa ga ri ga ma ga ri sa
80	Nadanamakriya	Sa <u>ri</u> <u>gaa</u> <u>ma</u> pa <u>dha</u> <u>ni</u> Sa <u>ni</u> <u>dha</u> pa <u>dha</u> <u>ni</u> <u>dha</u> pa <u>ma</u> pa <u>ma</u> <u>ga</u> <u>ri</u> sa	Sa ri gaa ma paa dha pa maa pa ma ga ri gaa ma pa dha ni saa ni dha paa dha pa maa pa ma ga ri gaa pa ma ga rii saa
81	Poorna Chandrika	Sa <u>ri</u> <u>ga</u> <u>ma</u> pa <u>dha</u> <u>ni</u> sa <u>ni</u> pa <u>ma</u> <u>ri</u> sa <u>dha</u> <u>rii</u> sa <u>nii</u> sa	Dha ni sa ri ga ma dhaa pa maa rri ma ri sa ni pa dhaa rri ni rrii saa
82	Gumma Kambhoji	Sa <u>ri</u> <u>ga</u> pa <u>dha</u> <u>ni</u> <u>dha</u> pa <u>dha</u> sa Sa <u>nii</u> <u>dha</u> pa <u>dha</u> <u>ni</u> <u>dha</u> pa <u>ma</u> <u>ga</u> <u>ri</u> sa	Sa ri gaa paa dha ni dha paa dhaa   pa dha pa ma gaa pa maa ga ri saa
83	Malavi Gaula	Sa <u>ri</u> <u>ga</u> <u>ma</u> pa <u>dha</u> <u>ni</u> Sa <u>ni</u> <u>dha</u> pa <u>ma</u> <u>ga</u> <u>ri</u>	Sa ri ga ma dhaa pa dha ni sa rii sa ni dha pa ma ga rii ga ma ga rii sa
84	Asaveri	Sa <u>ri</u> <u>ga</u> <u>ri</u> <u>ma</u> pa <u>dha</u> Sa <u>ni</u> <u>dha</u> pa <u>ma</u> <u>ga</u> <u>ri</u>	Sa ri ma dhaa pa dha rii ssa ni sa dha ni dhaa pa ma gaa rii sa
85	Surati	Sa <u>ri</u> <u>ma</u> pa <u>ni</u> sa <u>ri</u> Sa <u>ni</u> <u>dha</u> pa <u>ma</u> <u>ga</u> <u>ri</u>	Saa ri pa ma nii dha pa sa nii dha pa ma ga rii sa

No.	Raga	Arohana and Avarohana	Arohana, Avarohana Kala Svaras
86	Athana	Sa ri ma pa dhaa pa nii Sa ni pa dha ma ri gaa ri sa	Ni sa ri ma pa ma dhaa pa ma pa sa sa rii sa ni sa dhaa pa ma rii sa ni dha ssaa
87	Begada	Sa ri ga ma pa ni sa Ni dha pa ma ga ri sa	Ni sa gaa ma pa nii sa ni dha pa dha maa ga ri sa
88	Darabari	Sa ri gaa ma pa dha ni Sa ni dha pa ma ga ma ri sa	Sa ri gaa ma pa dha nii sa nii dha pa ma gaa rii sa
89	Madhumavati	Sa ri ma pa ni sa Ni dhaa pa ma ri sa	Ma pa nii sa ri ma ga rii ma pa dhaa pa ma ri sa
90	Bhupala	Sa ri ga pa dha Sa dha pa ga ri	Sa ri ga pa dhaa sa dhaa pa ga rii sa
91	Pharazu	Sa ga ma pa dha ni Sa ni dha pa ma dha ma ga ri sa	Sa ri ga ma pa dha nii sa nii dha pa maa dha pa dha maa ga ama ga rii saa
92	Manji	Ri ga ma pa dha ni sa Ni dha paa maa gaa ri	Ri ga ma pa nii dha pa ma ga maa gaa rii saa
93	Mangala Kausika	Sa ga ma dha ni   Sa ni dha ma   ga ma pa ma ga ri ga ma ga ri sa	Sa ni ri sa ma gaa pa ma ga ga ma dha ni sa nii dhaa maa ga rii sa
94	Saranga	Sa ri ma pa ni Sa ni pa ma ri sa	Sa ri ma pa nii sa ni pa ma rii pa ma rii sa



#### 5.4 Bhadrachala Ramadas [Krishna Gana Samaj Souvenir – April 1963]

“The whole of India bears the impression of certain common movements of thought and life, of common ideals and institutions.” Hinduism has a fundamental unity in its philosophic thought. All religious reform movements based on Bhakti were non-ritualistic in nature and monotheistic in character and established a deep-rooted belief among the people of India that God, the Supreme Being, could be worshipped under different names, Shiva, Vishnu, Rama, Krishna and that there was no fundamental difference among different religions.

With the revival of Hinduism through the spread of Vaishnavism were associated during the 15th, 16th and 17th centuries the names of a number of saints, who spread their message of Bhakti of Rama or Krishna through ‘Sankirtana’ or Song. Jaidev, Mira, Tukaram, Kabir and Tulasidas were some of the great ‘Minstrels of God’ who sang the Name and praise of the Lord. Bhadrachala Ramadas belonged to this class of saints and had gained Rama Sakshatkara (Self-Realisation) through renunciation and intense suffering by total surrender to Lord Sri Rama. He should not be confused with Ramdas, the Maharashtra Saint and the spiritual preceptor of Chatrapati Shivaji.

Ramadas was an acquired name. His original name was Kancherla Gopanna. He was born in Nelakardapalle in the Kammamet taluq. Lingana mantri and Kamamba were his parents.

While very young when he was reading ‘Bala Ramayanam’ he was captivated by the heroic deeds of Sri Rama and was always engaged at home in Rama Bhajana—singing in praise of Rama.

As the disciple of Raghunatha Bhattaracharya he became proficient in all sastras and under his influence took to Vaishnavism. He was married early. He was initiated into Ramataraka mantra. The popular story that Kabir Das was his guru cannot be true, because Kabir lived 150 years before Ramadas. The initiation of Ramadas into Ramataraka Mantra proved to be a turning point in his life as indicated in the kirtana “Tarakamantram Korina Dorikenu, Dhanyudanaitini O, Rama”. (As ordained by sastras, Gopanna was a grihasta until a son was born and then discarded all worldly desires, renounced his property and spent it all for the benefit of the poor and needy).

He led a life of voluntary poverty and was going round the streets in Uncha vritti—begging for the daily food—and was for



the most part of the day engrossed in worshipping Rama. Having suffered penury for sometime, Gopanna found it impossible to feed the poor that continued to seek his help and felt that he should earn money and spend it in charity. He left for Hyderabad to seek employment.

Abdul Hasan Tanisha was then the Nawab of Golconda, Pingali Madanna was the Minister and Pingali Akkana, the brother of Madanna was the Commander-in-chief. Akkana and Madanna were said to be the maternal uncles of Gopanna. He obtained an audience with the Nawab and was appointed Tahasildar of Bhadrachalam taluq. In all thankfulness to Lord Sri Rama, Gopanna settled down at Bhadrachalam and set about his duties.

Situated on the sacred banks of the Godavary, Bhadrachalam was a famous place of pilgrimage with a temple of Rama built on the top of a small hill—Bhadra Giri—or Bhadrachalam. Sri Rama was said to have lived very near this place at Parnasala, whence Sita was abducted by Ravana.

Gopanna earned a good name as a just administrator, a great devotee of Sri Rama and a highly charitable person. One day, while Gopanna was absorbed in looking after the feast where pious Brahmins were being entertained, his son was entangled in the gruel pit and lost his life. Gopanna's wife took him out with a heavy heart and did not inform her husband till the feast was over. Gopanna prayed to Sri Rama in all humility and begged Him to revive his son. The boy came to life through Sri Rama's grace. This miraculous experience stimulated Gopanna's devotion to Rama to a higher degree. In devotional fervour, he burst out into song with Ramadas as the "mudra" or signature, and Ramadas's fame began to spread.

The temple of Bhadradri Rama was an old and modest type of architecture and it occurred to Ramadas that he should erect a grand and imposing structure for his Lord. With the advice and consent of the people, he started on the venture, using freely state revenues collected by him. The expenditure passed unchecked and mounted to six lakhs of pagodas. The magnificent temple as it stands now is surrounded by twenty-four lesser pagodas and surmounted by a lofty Gopuram-tower. Ramadas made elaborate arrangements for daily worship and periodical festivals. Pilgrims flocked to the temple in large numbers and they were being fed at state expense. Ramadas transformed Bhadrachalam, to his heart's content, into a Kaliyuga Vaikuntha—Heaven on earth.

Ramadas was conscious that he was spending public money, but passionately believed that it was being spent for the benefit



of the people towards Rama Karya—divine act—and that Sri Rama would certainly protect him! But he was soon called to account and ordered to appear before the Nawab's darbar. Tanisha, Abdul Hasan, was not satisfied with the explanation of Ramadas and ordered imprisonment until the state debt was cleared.

In his predicament Ramadas poured forth his supplications to Sri Rama. As time passed and as there was no hope of the repayment of the debt, Ramadas was molested and tortured in many ways by the jail authorities in utter callousness. Ramadas braved the sufferings, steadfastly fixing his faith in the grace of Rama and was coming out of each ordeal unscathed to the astonishment of all. During these long years of imprisonment, Ramadas appealed to Sri Rama in various moods—in love, in anger, in despair and agony. It was neither bravado, nor disrespect but firm faith and the impulse of love that found expression in emotional outbursts of song. Rama was not far off to Ramadas, but near at hand as a brother, friend, father and protector “in a glorious intimate relationship.” ~~He~~ appealed to Mother Seeta to intervene on his behalf and urge her Lord to take pity on him. His kinship with Rama who was his Lord, when all his entreaties were of no avail, transgressed the limits of passion and he cried out in utter helplessness, “why do you hide your face, you thief; why do not you pay the money I had spent for you? I will break your head with a round hard stone.”

*Ramadas*

Ramadas's 'ananya bhakt'—unswerving devotion—to Sri Rama was remarkable and unparalleled. After twelve long years of rigorous solitary confinement and suffering in a dungeon, Rama took pity on his helpless devotee, who in despair, made up his mind to drink poison to end his miserable existence.

Tanisha lay enrapt in slumber in his palace when, entered in, two soldiers bearing an immense weight of treasure. They poured the gold coins on the floor and requested the astonished Nawab to write out a release for the defalcations of Ramadas. Abdul Hasan, bewildered, turned to find writing materials, but the two “servants of Ramadas” had vanished. Tanisha took it to be all a dream, but when the day broke, the money was there on the ground and on being counted was found to be the exact amount due to the State. Then Tanisha knew that it was Rama and Lakshmana who had brought the treasure and ordered the release of Ramadas,

From the Nawab's palace, Rama and Lakshmana hastened to the prison, spilt the poison on the ground, left a receipt containing the signature of Tanisha for the debt and vanished.



About fifty Kirtanams of Ramadas were included in this book at different places. All the musical compositions of the book bear the signature of Bhadrachala Ramadas and it fits in well with the compositions of Ramadas, as well as the songs composed by Varada Ramadas. Sometimes it is very difficult to distinguish between the compositions of the two. But the Kirtanams of Ramadas have a distinct style and diction. They are full of pathos having been composed during the period that Ramadas had spent in goal where he bewailed his wretched captivity.

Ramadas's songs were written in colloquial Telugu for the benefit of the people. The simple metaphors and imagery drawn from common life have a direct appeal. The singing saints of Medieval India, who preached the doctrine of bhakti, discarded Sanskrit and used the language of the people among whom they lived. The people listened and made them their own. These musical compositions had the effect of uniting the people in their inner life as nothing else could have done.

Ramadas followed the path of Nama Siddhanta and sang the praise of Rama Nama. It was Ramananda, Kabir and Tulsidas that turned towards the love of Rama, who was considered as the highest avatar of the Lord, who "incarnated himself out of love and compassion for the sake of suffering humanity." Just as Tulsidas's Ramayana sank into the consciousness of the whole of North India, Ramadas's Kirtanams installed Rama right in the hearts of the people of Andhra, and Bhadrachalam became the chief place of pilgrimage. Pious Andhras began writing out the name of Sri Rama ten million times—Rama Koti—and carried the bundle of the manuscript to Bhadrachalam in great religious faith and offered it at the feet of Sri Rama. Ramadas had spread the cult of Sri Rama throughout the Telugu Country. Rama Mandirs were established in all towns and villages and Rama Bhajana began to be a regular religious and social feature in the life of the people. Sri Rama Navami is celebrated for nine days with great enthusiasm in many places in the Telugu country, even to this day. Ramadas's influence in the religious faith of the people of Andhra is very wide and deep.

### Poet and Composer

Ramadas was the author of 'Dasarathi Sataka' a collection of one hundred verses on Rama. The verses have an outstanding poetic merit and are remarkable for their bhakti bhava. Rama is exalted as the supreme God, who alone is capable of granting 'moksha'—salvation to those that bow down to him in reverence.

"Mrokkina neeku mrokkavale moksha mosangina neeva eevalen"

Ramadas exhorts himself to sing the praise of Rama here and now, while he is hale and healthy and not to postpone it to a



time when he becomes physically and mentally weak and suffers the infirmities of old age, and he echoes the sense of the famous sloka of Mukunda Mala :

“Krishna twadeeya pada pankaja panjaranta-  
madhyame visatu manasarajahamsa,  
Pranaprayana samaye kapa vata pithaihi-  
kanthavarodhana vidhow smaranam kutasthe.”

Ramadas Kirtanams are simple in style and rythm abounding in pada yamaka—the stanzas of the composition containing words ending with the same syllable. They surge in emotion and are set in a tempo suited for the rendering of the song in appropriate music and dance. Some of them are in very slow tempo and express deliberate and deep emotion.

They are composed in nearly thirty of the popular rakti ragas like Anandabhairavi, Nadanamakriya, Asaveri, Varali, Punnavagavali, Dhanyasi, Bhairavi, Regupti (the older form of Mohana), Sankarabharanam, Yaman Kalyani, Yedukula kambhoji and Mukhari. Adi Thala, of eight matras, was mostly employed.

### **Influence on Later Composers**

The kirtanams of Ramadas have a distinct style of their own much different from that of the famous Sankirtanams of Annamacharya, the first and great composer of the fifteenth century. Annamacharya's compositions were of the type called Padams. During the centuries that followed many Vaggeyakaras like Kshetrappa and Sarangapani composed padams after the style of Annamacharya. In the same way Ramadas's Kirtanams influenced musical composers that came after him. Tumu Lakshminarasimha Dasu, Varada Rama Dasu, Tatanki Venkata Dasu, Nittara Rama Dasu and Mudigonda Mallikarjunudu were a few among them.

Sri Tyagajaj, the greatest composer in South Indian music was also influenced by Ramadas. Tyagaraja's mother was singing the Kirtanams of Ramadas, when Tyagaraja was very young. As an intense devotee of Rama, Tyagaraja was fascinated by the Kirtanams which left their impress on some of the divyanamams of Tyagaraja. An example of Ramadas's Kirtanams :

#### *Ananda Bhairavi—Adi Tala*

Anth Rama Mayam ee jagamantha—Rama mayam “Anta”  
Antharangamuna anthmaramudanantha rupudai vinthalu seyaga “Anta”  
Andandambulu pindamdambulu—brahmandambulu Brahmanu modalugu  
“Anta”  
Gnanendriyamulu, Karmendriyamulu—nirmaladharmamu nirguna  
rupamu “Anta”

(Please turn to page 4)



### Bhadrachala Ramadas (*Continued from page 28*)

Nadulu Vanambulu vana mrigamulu—viditha karmanulu veda  
sastramulu “Anta”

Somasuryulunu surulu taralunu—alayambudhulunu avanidharamulu  
“Anta”

Ashta dikkulunu adi seshuvunu—asthavasuvulunu arishadvargamu  
“Anta”

Dhirudu Bhadrachala Ramadasu—Korika losagedi tharaka namamu  
“Anta”

Ramadas says, “Rama is omnipresent and ~~that~~ the universe is His manifestation. Rama mystifies the mind with the infinity of His forms—worlds, embryos, universes, Brahmas (Creators), the senses of perception, the limbs of action, the crystal clear dharma the form with no attributes (nirguna), the rivers, forests, animals, the ordained actions, Vedas and sastras, the Moon and the Sun, heavenly beings and stars, the oceans and the mountains, the eight cardinal points, the Adi Seshu (who is supporting the earth according to the Puranas) the Primordial serpent, the eight vasuvus, the six primary passions and the Taraka Nama that grants the desires of the brave Bhadrachala Ramadas, all these, abound in Rama.

This Kirtanam is a typical illustration of Ramadas’s compositions. It is full of ‘Yamaka’ and repeating rythm and when sung in quick tempo produces a dynamic exhilarating and transcendental effect.

Tyagaraja expresses the same sentiment in the Harikambhoji kriti :

*Undethi Ramudokadu* oorka chedipoke manasa—Unde—  
Chenda marthanada madhya mandalamunanu chelanguchu—Unde—  
Tamasadi gunarahitudu dharmathmudu sarvasamudu  
Kshemakarudu Tyagaraja chittahitudu Jagamunindi—Unde—

Tyagaraja composed a number of divyanamams after the style of Ramadas’s kirtanams, and they were intended for congregational singing in bhajana kutams. Unlike the short kritis of great musical quality the divyanamams were composed in simple music with a number of charanams or stanzas. The kirtanams of Ramadas and the divyanamams of Tyagaraja are great models of devotional songs in Light classical Karnatak Music.

Ramadas promulgated the religious ideals and cultural traditions of Sanathana Dharma through his kirtanams which touched the hearts of the people of the land and acted as a great bond of spiritual union. He had attained a respectable place in the galaxy of the Indian religious preachers and mystics of the sixteenth and seventeenth centuries. May he be a beacon light in the creation of a new synthesis in the national life of free India !



## 5.5 Evolution of Indian Music – The Classical Tradition [September 18, 1955]

EVOLUTION OF INDIAN MUSIC

# THE CLASSICAL

by  
VISSA AP

INDIAN music has its origin in the Vedic chants. Vedic music was both vocal and instrumental. It was a form of intense prayer.

The music of the *Rik* chant consisted of three notes, *udatta*, *anudatta* and *svarita*. *Rig Veda* was rendered into melodies or *Samans*—thousands in number. The number of musical notes employed in *Sama-gana* gradually increased from four to seven. The notes of the *Saman* scale were in the descending order of pitch—*Ni*, *Dha*, *Pa*, *Ma*, *Ga*, *Ri*, *Sa*. Syllables like *au*, *ho*, *va*, *iha*, *haya*, *ye*, called *stobas*, which have no particular meaning, are profusely used to facilitate singing. Perhaps the syllables *cya*, *iya*, *tiya* used in *Pillari gitams* are the imitations of these *stobas*.

The *Saman* scale is the *Suddha* scale of Indian music. The earliest and popular among the seven varieties of the *Suddha* scale was the *Gandhara* or *Gandharva* scale, *Ga*, *Ri*, *Sa*, *Ni*, *Dha*, *Pa*, *Ma*. This *Ga* scale was subsequently replaced by the *Ma* and *Sa* scales or *gramas* which were subdivided into fourteen *jatis*. Finally, only seven of these *jatis* were found to be musically worthy and *Ma grama* went out of use. Out of the remaining seven *jatis* of the *Sa grama* were formed scales of music called *Tanas* which contained only six or five notes in the octave. These *tanus* were subsequently called *ragas*. Each one of them was sung only at the time of a particular sacrifice and hence was named after that sacrifice.

Music advanced in practice and theory. Bharata explains in the *Natya Sastra* how the interval of an octave was divided into twenty-two *srutis* or micro-tonal intervals and how music was composed in classic Sanskrit in imitation of Vedic music in what was called *Marga* music. This *Marga* music was scientific and immutable. It was practised in religious circles and was, therefore, confined to special localities.

Side by side with the *Marga* music developed the music of the people called *Desi* music. It was sung by all the members of the society, women, children, cowherds and kings.

The *Desi* music grew with the people and changed with the locality and finally replaced completely the *Marga* music by about the sixth century A.D. *Matanga* in his *Brihaddesi* gives elaborate details of the *Desi* music. *Sarn-gadeva* mentions more than a hundred *Desi* ragas. The form of these ragas changed from time to time due to the impact of the dynamic life-music of the people and *Desi* music was thus taking up newer and newer shapes. The *Lakshana* of the music followed the *Lakshya* and was formulated, codified and classified into *Sastra Granthas*. This natural process of change and growth produced the different treatises on music like *Natya Sastra*, *Sangita Ratnakara*, *Ragavibodha*, *Chaturdandi Prakasika* and *Sangita Samranta*. It is this codified *Desi* music that goes under the name of classical music. I will now give a brief account of the growth and development of a few of the most important features of Indian music viz, ragas and musical compositions.

Raga is the soul of Indian music and is the medium through which emotional experiences are expressed in terms of a succession of musical notes. Raga classification was made on fanciful grounds, to start with. There were sad ragas and gay ragas. There were *Purusha*, *Stri* and *Napunsaka* ragas. Some of them bore the names of the places wherefrom they were borrowed, *Bangala*, *Saurashtra* etc. Another classification depended upon the emotions evoked at different times of the day—from dawn to dawn, and at different seasons of the year. Yet another principle classified ragas into *Ragangas*, *Upangas*, *Bhashangas* and *Kriyangas*. At the end of all these came the scientific and mathematical method based on *Svara-graha*. *Venkatanakhi* in his



## 5.5 a Evolution of Indian Music – The Classical Tradition

[Late Prof. Vissa Appa Rao was a Musicologist of repute, and a member of the Expert Committee of Music Academy, Madras for a good number of years. He edited 'Tyagaraja Kirtanalu', 'Kshetrappa Padamulu' and contributed a number of articles on Music, dance and art to leading journals and the A. I. R. We are pleased to publish one of his erudite articles. Our grateful thanks are due to Prof. Vissa Ramachandra Rao for kindly procuring for us the article, for publication in our Souvenir.]

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## THE CLASSICAL TRADITION

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Indian Music has its origin in the Vedic chants. Vedic music was both vocal and instrumental. It was a form of intense prayer.

The music of the Rik chant consisted of three notes, udatta, anudatta and svarita. Rig Veda was rendered into melodies or Samans—thousands in number. The number of musical notes employed in Sama-gana gradually increased from four to seven. The notes of the Saman scale were in the descending order of pitch—Ni, Dha, Pa, Ma, Ga, Ri, Sa. Syllables like au, ho, va, iha, haya, ve, called stobas, which have no particular meaning are profusely used to facilitate singing. Perhaps the syllables aya, iya, tiya used in Pillari geethams are the imitations of these stobas.

The Saman scale is the Suddha scale of Indian music. The earliest and popular among the seven varieties of the Suddha scale was the Gandhara or Gandharva scale, Ga, Ri, Sa, Ni, Dha, Pa, Ma. This Ga scale was subsequently replaced by the Ma and Sa scales or gramas which were subdivided into fourteen jatis. Finally only seven of these jatis were found to be musically worthy and Ma grama went out of use. Out of the remaining seven jatis of the Sa grama were formed scales of music called tanas, which contained only six or five notes in the octave. These tanas were subsequently called ragas. Each one of them was sung only at the time of a particular sacrifice and hence was named after that sacrifice.

Music advanced in practice and theory. Bharata explains in the Natya Sastra how the interval of an octave was divided into twenty two srutis or microtonal intervals and how music was composed in classic Sanskrit in imitation of Vedic music in what was called marga music. This marga music was scientific and immutable. It was practised in religious circles and was, therefore, confined to special localities.

Side by side, with the marga music developed the music of the people called the desi music. It was sung by all the members of the society, women, children, cowherds and kings.



Marga music compositions called Gitis. They were of four varieties. Each of them was made of three parts-called Kalas, and each was sung in different tempo.

The compositions in Desi music were each of them divided into four parts with names borrowed from Saman music—Udgraha, Melapaka, Dhruva, and Aboga. The compositions in Desi music are called Sudas, the Desi name for Gitis. Sudas are of two kinds, Suddha and Salaga. These were further subdivided into a number of varieties—Ela, Ekatali, Arya, Gatha, Dwipada, Totaka, Dandaka, Dhavala etc. These were of local origin and imitated Prakrit prosody and some of these are found among the earliest literary forms of Telugu prosody. Palkurki Somanatha (13th Century A. D.) mentions a number of these and other varieties of musical compositions. The Lakshna of many of these was given by Annamacharya (15th Century A. D.) in his Sankirtana Lakshana. All musical compositions were then called with one name Pada which was a Sankirtana of God. The Sankirtana has three parts—Uadraha or Pallavi, Abhoga or Anupallavi, and Dhruva or Charana, which are the adaptations of nomenclature in Desi music which have been already mentioned. In the second part of Abhoga or Anupallavi, the notes employed are higher in pitch than those used in the first part Pallavi. The second half of the Charana contains the mudra and is sung like the Anupallavi. This General scheme has been adhered to during past five or six centuries in Indian music. The corresponding parts of the song-form in Hindustani music are Astai, Antra and Sanchari.

Before I conclude I must say a few words about the place of Sruti or drone in our music, about Sruti-layam and Sruti-gnanam. Sruti gnanam depends on the perception of unity belonging to a particular emotional structure called a melody or raga, in regard to the various musical notes and their progressions. The perception is a complex psychological process which constitutes the musical sense. It is this musical faculty that is supported and enhanced by the sruti, the drone, the tambura. The tambura supplies the back-ground music and functions as an integrator which makes the whole melody into one psychological and esthetic organization. This is based on the inherent ability of the musical ear which perceives not only the fundamental vibration of a string, the tonal but also its upper partials and the various combination tones. Thus all the important notes of the musical scale are appreciated by the musical ear which possesses the uncanny musical sense and this acts as the correct guide in the preservation of accurate character or individuality of a melody or ragas. This complicated psychological process is beyond objective analysis and lies at the root of the marvellous and unique melodic system of Indian music.

[ Courtesy All India Radio ]



## 5.6 The Evolution of Raga in Carnatic Music

# The Evolution of Raga in Carnatic Music

BY

VISSA APPARAO, M.A., L.T.

The evolution of Music is the same throughout India upto about the twelfth century and can therefore be traced with the help of sanskrit texts on music—Bharata's *Natya Sastra*, Narada's *Siksha*, Matanga's *Brihaddesi* and Saranga's *Sangitaratnakara*. "Sangita" according to Bharata is composed of *Nrityam*, *Gitam* and *Vadyam*. Bharata had a good deal to say about the art of dramaturgy, besides expounding at length, the art of dancing. This was his speciality. According to him *Gitam* or Music is an art second in importance to *Nrityam* and primarily helpful to it. Even to day we find that the art of acting and dancing forms an important part in the life of the common people of all countries. As we pass on from Bharata to Sarangadeva we find a change in the interpretation of *Sangita* which meant only *Gitam* and *Vadyam* i.e., music—vocal and instrumental. This is how we understand the term, even now, generally.

Music is divided into *Marga* and *Desi*. *Marga* music represents the systematised music of the ancient Aryans. Music that is popular is called *desi*. This may not be so systematic and rule-ridden as *marga* music. *Desi* music is the living music of the people and undergoes modifications from time to time which are noted and classified. We are concerned in this article only with this *desi* music. But, there is yet another type of music—the music of the folk songs. Folk songs were prevalent from times much

earlier to Nannaya and varied forms were handed down by tradition under the names, *Jolalu*, *Elalu*, *Tummeda padamulu*, *Gobbipadamulu*, *Yakshaganamulu* etc. These are sung to day by the simple village folk and form the back-bone of folk-music which is a potent factor in the lives of millions of our countrymen. Folk music must be revived, better understood and recognised. It can be used as a great instrument in the general reconstruction of our village life—which is an urgent problem. And much can be said about this type of music.

### Evolution of Raga

The outstanding feature of Bharata *Sangita* is *raga*. The evolution of *raga* is practically the evolution of music in general and I will deal with this important aspect of the development of music in a general way.

1. *Swaras* and *srutis*:—*Raga* generally ranges within three octaves and within each octave are recognised seven *swaras* called *sa*, *ri*, *ga*, *ma*, *pa*, *dha*, *ni*. Within these broader intervals are recognised 22 finer intervals called *srutis*. Interval is the ratio between the frequencies of two notes i. e. between the number of times the sounding body vibrates per second in producing the notes. The following tables indicate how the 22 *srutis* are distributed between the seven original or *suddha* notes in an octave.

	Ni	Sa	Ri	Ga	Ma	Pa	Dha	Ni	Sa
I	Srutis between successive swaras } 4		3	2	4	4	3	2	4
	Sruti number of Suddha Swaras } 4		7	9	13	17	20	22	
II	4	Sruti interval nearly corresponds to $\frac{9}{8}$ called Major Tone							
	3	" " $\frac{10}{9}$ " Minor Tone							
	2	" " $\frac{16}{15}$ " Semi Tone							

*Srutis* and *sruti sthanas* were determined in terms of lengths of the vibrating string on the *vina*. After a good amount of variation a common standard of notation has been accepted with very slight differences in the sharp notes of *ma* as detailed in table III. This table contains very important information which forms the basis of Carnatic and Hindustani music. I will now point out certain fundamental relations between the 22 *srutis*. When two notes are sounded simultaneously

and if the combination produces a pleasing sensation we say that the two notes are in harmony and form a harmonious combination. Two notes of the same frequency form the best harmonious combination and are said to be in unison. If a stretched steel wire on the *vina* is divided into two equal parts each part emits the octave whose frequency is twice that of the fundamental note or *athara shadja* given out when the whole length vibrates. The frequency of the note given out is inversely proportional to the length of the vibrating string.



SRUTI No.		SYMBOL		NAME		INTERVAL		REMARKS
4	$\frac{V}{1}$	SA		Suddha Shadja	256	1		Venkatamakhā
5		Ra	Ri <sub>1</sub>	Ekasruti Rishabha	243	$\frac{256}{243}$	81	sought to represent
6	2	Ri	Ri <sub>2</sub>	Dwistruti	25	$\frac{16}{5}$	80	the 22 srutis by 12
7		Ru	Ri <sub>3</sub>	Tristruti or Suddha	24	$\frac{10}{3}$		swaras; SA and PA are
8	3	Re	Ri <sub>4</sub>	Chatusruti	256	$\frac{2}{3}$		left out and the other
9		Ga	Ga <sub>1</sub>	Suddha Gandhara	243	$\frac{22}{27}$		twenty srutis are rep-
10	4	Gi	Ga <sub>2</sub>	Sad' ana	25	$\frac{6}{5}$		resented by 10 swaras
11	5	Gu	Ga <sub>3</sub>		24	$\frac{5}{4}$		each standing for 2
12		Gc	Ga <sub>4</sub>	Madhyama	256	$\frac{81}{64}$		srutis. This is the
13	6	Ma	Ma <sub>1</sub>	Suddha Madhyama	243	$\frac{4}{3}$		notation now adop-
14		Mi	Ma <sub>2</sub>	Tivra	256	$\frac{27}{16}$		ted in Carnatic Music.
15	7	Mu	Ma <sub>3</sub>	Prati	243	$\frac{64}{45}$	25-( $\frac{4}{3}$ ) <sup>2</sup>	These twelve swaras
16		Me	Ma <sub>4</sub>	Chuta Panchama	81	$\frac{40}{27}$	24	are numbered in
17	8	PA		Suddha Panchama	256	$\frac{3}{2}$		order under V in the
18		Dha	Dha <sub>1</sub>	Ekasruti Dhaivata	243	$\frac{128}{81}$	81	first column. They
19	9	Dhi	Dha <sub>2</sub>	Dwistruti	25	$\frac{8}{5}$	80	are sounded at the
20		Dhu	Dha <sub>3</sub>	Tristruti or Suddha	24	$\frac{5}{3}$		12 frets of the Vina.
21	10	Dhc	Dha <sub>4</sub>	Chatusruti	256	$\frac{27}{16}$		According to some,
22		Na	Ni <sub>1</sub>	Suddha Nishadha	243	$\frac{16}{9}$		the 2nd and 9th frets
1	11	Ni	Ni <sub>2</sub>	Kaisiki	25	$\frac{9}{5}$		represent Suddha ri-
2	12	Nu	Ni <sub>3</sub>	Kakali	24	$\frac{15}{8}$		shabha and Dhaivata
3		Nc	Ni <sub>4</sub>	Chuta Shadja	256	$\frac{243}{128}$		instead of Dwistruti
13		SA		Tara Shadja	243	2		rishabha & dhaivata.

If the string is divided into three equal parts and if  $\frac{2}{3}$  of the length is sounded the frequency will be  $\frac{3}{2}$  times that of the fundamental. Similarly if  $\frac{3}{4}$ ,  $\frac{4}{5}$  and  $\frac{5}{6}$  of the string are sounded, notes of frequencies  $\frac{4}{3}$ ,  $\frac{5}{4}$  and  $\frac{6}{5}$  times that of the fundamental or Shadja will be given out. Experience shows that each of these notes with frequency ratios  $2, \frac{3}{2}, \frac{4}{3}, \frac{5}{4}$  and  $\frac{6}{5}$  sounded with shadja form a harmonious combination and that the degree of harmony gradually decreases in the order. Leaving out tara shadja (?) the panchama ( $\frac{3}{2}$ ) and the madhyama ( $\frac{4}{3}$ ) form very good harmonious combinations with sa. These are the Sa-Pa and Sa-Ma relations and are taken as the basis of the determination of the 22 srutis, as detailed below.  $1, \frac{3}{2}, \frac{4}{3}, \frac{5}{4}$  and  $\frac{6}{5}$  have been mentioned above. Chatusruti rishabha  $\frac{9}{8}$ , in the higher octave is obtained by raising pa ( $\frac{3}{2}$ ) by the panchama interval  $\frac{3}{2} - (\frac{3}{2} \times \frac{3}{2} = \frac{9}{4})$ . By reducing  $\frac{9}{4}$  to its corresponding note in the lower octave we obtain  $\frac{9}{8} = (\frac{9}{4} \times \frac{1}{2})$ . Thus  $\frac{9}{8}$  is obtained by the Sa-Pa relation starting with pa. Starting with  $\frac{9}{8}$  and

raising it by an interval pa,  $\frac{27}{16}$ , chatusruti dhaivata, is obtained. Similarly  $\frac{27}{16} \times \frac{3}{2} = \frac{81}{16}$  lowered to the octave below gives  $\frac{81}{32}$  (Ga<sub>1</sub>) and  $\frac{81}{32} \times \frac{3}{2} = \frac{243}{64}$  (Ni<sub>1</sub>). Thus Sa-Pa relation yields four more srutis making up thus far 9 srutis. Again ma of ma is  $\frac{16}{9} = (\frac{4}{3} \times \frac{4}{3})$  Ni<sub>1</sub> and  $\frac{16}{9} \times \frac{4}{3} = \frac{64}{27}$  reduced to the lower octave =  $\frac{64}{27}$  (Ga<sub>1</sub>). Similarly  $\frac{64}{27} \times \frac{4}{3} = \frac{256}{81}$  (Dha<sub>1</sub>) and  $\frac{256}{81} \times \frac{4}{3}$  reduced by  $\frac{1}{2} = \frac{256}{162}$  (Ri<sub>1</sub>). This makes up 13 srutis. Kakali nishada ( $\frac{15}{8}$ ) is panchama of antara gandhara and Dha<sub>1</sub> ( $\frac{5}{3}$ ), ma of  $\frac{5}{3}$ . Similarly kaisiki ( $\frac{9}{5}$ ) is panchama and Dha<sub>1</sub> ( $\frac{5}{3}$ ) is madhyama of Sadharana gandhara. This takes us to 17 srutis. Similarly  $\frac{9}{5} \times \frac{4}{3} = \frac{12}{5} = \frac{2}{5} - \frac{1}{5}$  (Ri<sub>2</sub>),  $\frac{10}{9} \times \frac{4}{3} = \frac{40}{27}$  (Ma<sub>1</sub>),  $\frac{8}{5} \times \frac{4}{3} = \frac{32}{15} = \frac{1}{15} - \frac{1}{15}$  (Ri<sub>3</sub>),  $\frac{16}{9} \times \frac{4}{3} = \frac{64}{27}$  (Ma<sub>2</sub>). This brings us to 21 srutis. The only one to be accounted for is  $\frac{27}{16} = \frac{81}{32} \times \frac{4}{3}$  i.e. ma of  $\frac{81}{32}$ .  $\frac{81}{32}$  is not on the recognised list of srutis and is smaller than the lowest note  $\frac{256}{64}$  (Ri<sub>1</sub>) so, to be consistent, Ma<sub>1</sub> must be  $\frac{256}{64} \times \frac{4}{3} = \frac{1024}{192}$ . But  $\frac{1024}{192}$  is too odd a fraction and hence  $\frac{27}{16}$  was chosen.



Some consider  $\frac{4}{3}$  as pratimadhyama and not  $\frac{5}{4}$ . Since  $\frac{4}{3}$  cannot be fitted into the Sa-Pa or Sa-Ma relation ( $\frac{9}{8} \times \frac{5}{4}$ ) being  $Ga_3$  of  $Ri_1$ . So it is put out of the regular order of srutis in table III and  $\frac{5}{4}$  is preferred.

Further it is interesting to note that the ten srutis from sa to ma when raised by the interval pa successively yield the ten srutis, from pa to sa. Of the remaining three srutis  $Ma_2$ ,  $Ma_3$  and  $Ma_4$ ,  $Ma_2$  and  $Ma_4$  yield  $Ri_1$  and  $Ri_2$ , ten notes below each of them, in the higher octave.  $Ma_3$  ( $\frac{2}{3}$ ) once again does not conform to the rule and forms an exception where as  $\frac{10}{27} \times \frac{3}{2} = \frac{5}{9}$  i. e.,  $Ri_1$  of the higher octave. However  $\frac{2}{3}$  has been chosen instead of  $\frac{10}{27}$  as stated already.

Again from table III it is clear that the interval between the ekasrutl and dwisrutl and between thrisrutl and chatursrutl, for all swaras is  $\frac{8}{10}$ , called a comma. But the interval between dwisrutl and thrisrutl swaras is  $\frac{2}{3}$  slightly higher than  $\frac{8}{10}$  and slightly lower than  $\frac{2}{3}$ . Whenever there is a change from the last sruti of the swara to the first sruti of the next swara Sa to  $Ri_1$ ,  $Ri_1$  to  $Ga_1$ , etc., the interval changes by  $\frac{2}{3}$  which is the full measure of a quarter tone or eka sruti.  $\frac{8}{10}$ ,  $\frac{2}{3}$ ,  $\frac{2}{3}$ , these three are the different quarter notes we come across. The lowest of these,  $\frac{8}{10}$  is the pramana sruti mentioned by Bharata in connection with the Pa of Madhyama grama.

The seven original swaras mentioned in table III have their origin in the udatta, anudatta and swarita varieties of chanting Veda, particularly Sama-Veda. These seven notes are distinguished as pure or suddha. All other notes or srutis which have their origin in popular or secular music, as opposed to vedic or religious music, are termed vikruta (strange or contaminated.)

2. Gramas:—These are three in number and represent simple scales or modes of music consisting of only suddha notes, starting with Ga, Ma, and Sa respectively and going down the scale thus—  
(i) Ga Ri Sa Ni Dha Pa Ma

(ii) Ma Ga Ri Sa Ni Dha Pa

and (iii) Sa Ri Ga Ma Pa Dha Ni

These three are called gandhara, madhyama and shadja gramas respectively. The first two are derived from vedic music and the last from secular music. Gandhara grama being the most ancient was extinct even at the time of Bharata. According to Bharata Pa in madhyama grama is one pramana sruti lower than suddha panchama and therefore is  $Ma_1$  in table III, a comma lower than Pa.

These gramas must have been the modes, religious and secular respectively pre-valent among the ancient Aryans when they began to live together forming gramas or villages.

The madhyama and shadja gramas can be expressed in convenient and useful form in terms of frequency or intervals.

Madhyama grama in the descending order of frequency or Avarohana Krama	Ma	Ga	Ri	Sa	Ni	Dha	Pa	Ma	Tab. III
	$Ma_1$	$Ga_1$	$Ri_1$	Sa	$Ni_1$	$Dha_1$	$Ma_2$	$Ma_1$	
	$\frac{4}{3}$	$\frac{3}{2}$	$\frac{1}{1}$	1	$\frac{2}{3}$	$\frac{5}{4}$	$\frac{2}{3}$	$\frac{3}{2}$	

The frequency ratios or intervals of notes in the lower octave are half the ratios of corresponding notes in the higher octave. So  $Ma_1$  has an interval  $\frac{1}{2} \times \frac{4}{3} = \frac{2}{3}$ . The other three ratios are similarly obtained.

Madhyama grama in the ascending order of frequency or Arohana-Krama	$Ma_1$	$Ma_2$	Dha	$Ni_1$	Sa	Ri	Ga	$Ma_1$
	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{5}{4}$	$\frac{2}{3}$	1	$\frac{1}{1}$	$\frac{3}{2}$	$\frac{4}{3}$
	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{5}{4}$	$\frac{2}{3}$	1	$\frac{1}{1}$	$\frac{3}{2}$	$\frac{4}{3}$

These ratios are with reference to sa taken as unity. But since the series does not begin with sa but with  $Ma_1$  ( $\frac{2}{3}$ ) it is convenient and useful to express these intervals with reference to  $Ma_1$  taken as unity i.e. by making  $Ma_1$  the adhara sruti.  $\frac{2}{3}$  multiplied by  $\frac{3}{2}$  gives unity. Hence to keep the relative values unaltered each interval has to be increased one and a half times. Thus the series can be written—

#### Madhyama grama

- 1,  $\frac{1}{9}$ ,  $\frac{5}{4}$ ,  $\frac{3}{2}$ ,  $\frac{2}{3}$ ,  $\frac{1}{9}$ , 2 — Arohana Krama.  
2,  $\frac{1}{9}$ ,  $\frac{5}{4}$ ,  $\frac{3}{2}$ ,  $\frac{2}{3}$ ,  $\frac{1}{9}$ , 1 — Avarohana Krama.

It is easy to note from table III that for Shadja grama we have:

- 1,  $\frac{1}{9}$ ,  $\frac{3}{2}$ ,  $\frac{4}{3}$ ,  $\frac{3}{2}$ ,  $\frac{1}{9}$ , 2 — for Arohana  
2,  $\frac{1}{9}$ ,  $\frac{5}{4}$ ,  $\frac{3}{2}$ ,  $\frac{2}{3}$ ,  $\frac{1}{9}$ , 1 — „ Avarohana

It may be that in the grama mode of singing the tunes have been confined either to the ascending or descending order of notes of the grama. The extension of the range of the time to include both arohana and avarohana must have been the next stage of development.

3. Murchanas: The characteristic musical effect produced, when the arohana and avarohana of a grama are sung together in succession, is called a murchana. Each grama can be developed into seven different murchanas by successively making each one of the seven notes of the grama, the adhara sruti. The musical feeling varies with each such variation and the ear can easily distinguish the different murchanas. These may be taken as the earliest forms of ragas.

♦Nishada in the lowest octave or mandra sthayi is written thus—Ni with a dot below; in the middle octave or madhya sthayi it is written thus—Ni without a dot and in the highest octave or tara sthayi as Ni with a dot above. This is the notation adopted.



# Madhyama grama murchanas

	Arohana									Avarohana							
1	Ma	Pa	Dha	Ni	Sa	Ri	Ga	Ma		Ma	Ga	Ri	Sa	Ni	Dha	Pa	Ma
2	Pa	Dha	Ni	Sa	Ri	Ga	Ma	Pa		Pa	Ma	Ga	Ri	Sa	Ni	Dha	Pa
3	Dha	Ni	Sa	Ri	Ga	Ma	Pa	Dha		Dha	Pa	Ma	Ga	Ri	Sa	Ni	Dha
4	Ni	Sa	Ri	Ga	Ma	Pa	Dha	Ni		Ni	Dha	Pa	Ma	Ga	Ri	Sa	Ni
5	Sa	Ri	Ga	Ma	Pa	Dha	Ni	Sa		Sa	Ni	Dha	Pa	Ma	Ga	Ri	Sa
6	Ri	Ga	Ma	Pa	Dha	Ni	Sa	Ri		Ri	Sa	Ni	Dha	Pa	Ma	Ga	Ri
7	Ga	Ma	Pa	Dha	Ni	Sa	Ri	Ga		Ga	Ri	Sa	Ni	Dha	Pa	Ma	Ga

Shadja grama murchanas can similarly be written down. The first murchana of Madhyama grama can be written down in terms of frequency ratios as already explained thus:—

Arohana 1,  $\frac{10}{9}$ ,  $\frac{5}{4}$ ,  $\frac{3}{2}$ ,  $\frac{8}{3}$ ,  $\frac{5}{2}$ ,  $\frac{16}{9}$ , 2  
Avarohana 2,  $\frac{16}{9}$ ,  $\frac{5}{3}$ ,  $\frac{3}{2}$ ,  $\frac{8}{3}$ ,  $\frac{4}{2}$ ,  $\frac{5}{4}$ ,  $\frac{10}{9}$ , 1

All the notes are Suddha swaras except antara gandhara. The second murchana in arohana krama can similarly be expressed.

(Pa) Ma<sub>1</sub> Dha<sub>2</sub> Ni<sub>1</sub> Sa Ri<sub>2</sub> Ga<sub>1</sub> Ma<sub>1</sub> (Pa) Ma<sub>1</sub>  
 $\frac{20}{27}$ ,  $\frac{5}{6}$ ,  $\frac{8}{9}$ , 1,  $\frac{10}{9}$ ,  $\frac{32}{27}$ ,  $\frac{4}{3}$ ,  $\frac{40}{27}$  — with Sa as unity or Adhara Sruti  
1,  $\frac{9}{8}$ ,  $\frac{6}{5}$ ,  $\frac{27}{20}$ ,  $\frac{3}{2}$ ,  $\frac{8}{5}$ ,  $\frac{9}{4}$ , 2 — being taken as 1 or Adhara Sruti

Sa, Ri<sub>2</sub>, Ga<sub>2</sub>, Ma<sub>2</sub>, Pa, Dha<sub>2</sub>, Ni<sub>2</sub>, Sa  
See table III

All the remaining twelve murchanas can be similarly worked out. In table IV are given all the murchanas thus worked out, seven under each grama. Of these four from Madhyama grama and three from the Shadja grama are marked out thus. These form distinct types and the remaining seven are not of much musical value. These types or scales correspond to the melakarthis developed by Venkathmakhi and in table IV are given the names of the ragas which correspond nearest to Venkata-makhi's melakarta scheme. Any difference in identity is indicated by a question mark. The corresponding names of the ancient scales prevalent in countries west of India are also given.

Table IV Arohana

Madhyama grama murchanas			Shadja grama murchanas		
1) 1, $\frac{10}{9}$ , $\frac{5}{4}$ , $\frac{3}{2}$ , $\frac{8}{3}$ , $\frac{5}{2}$ , $\frac{16}{9}$ , 2	Hari Kambhoji ?		1, $\frac{10}{9}$ , $\frac{32}{27}$ , $\frac{4}{3}$ , $\frac{3}{2}$ , $\frac{8}{3}$ , $\frac{16}{9}$ , 2	Kharaharapriya ?	
2) 1, $\frac{9}{8}$ , $\frac{6}{5}$ , $\frac{27}{20}$ , $\frac{3}{2}$ , $\frac{8}{5}$ , $\frac{9}{4}$ , 2	Mixo Lydian Scale		1, $\frac{16}{15}$ , $\frac{6}{5}$ , $\frac{27}{20}$ , $\frac{3}{2}$ , $\frac{8}{5}$ , $\frac{9}{4}$ , 2	Bhavapriya	
3) 1, $\frac{16}{15}$ , $\frac{6}{5}$ , $\frac{4}{3}$ , $\frac{64}{45}$ , $\frac{8}{5}$ , $\frac{16}{9}$ , 2	Shanmukhapriya		1, $\frac{9}{8}$ , $\frac{81}{64}$ , $\frac{45}{32}$ , $\frac{3}{2}$ , $\frac{27}{16}$ , $\frac{15}{8}$ , 2	Aeolian Scale	
4) 1, $\frac{9}{8}$ , $\frac{5}{4}$ , $\frac{4}{3}$ , $\frac{3}{2}$ , $\frac{5}{3}$ , $\frac{15}{8}$ , 2	Sankarabharanam		1, $\frac{9}{8}$ , $\frac{5}{4}$ , $\frac{4}{3}$ , $\frac{3}{2}$ , $\frac{5}{3}$ , $\frac{15}{8}$ , 2	Mecha Kalyani	
5) 1, $\frac{10}{9}$ , $\frac{32}{27}$ , $\frac{4}{3}$ , $\frac{40}{27}$ , $\frac{5}{3}$ , $\frac{16}{9}$ , 2	Major Diatonic or Ionian Scale		1, $\frac{10}{9}$ , $\frac{32}{27}$ , $\frac{4}{3}$ , $\frac{40}{27}$ , $\frac{128}{81}$ , $\frac{16}{9}$ , 2	Lydian Scale ?	
6) 1, $\frac{16}{15}$ , $\frac{6}{5}$ , $\frac{4}{3}$ , $\frac{3}{2}$ , $\frac{8}{5}$ , $\frac{9}{4}$ , 2	Hanumat-todi		1, $\frac{16}{15}$ , $\frac{6}{5}$ , $\frac{4}{3}$ , $\frac{64}{45}$ , $\frac{8}{5}$ , $\frac{9}{4}$ , 2	Hari Kambhoji ?	
7) 1, $\frac{9}{8}$ , $\frac{5}{4}$ , $\frac{45}{32}$ , $\frac{3}{2}$ , $\frac{27}{16}$ , $\frac{15}{8}$ , 2	Phrygian Scale		1, $\frac{4}{3}$ , $\frac{3}{2}$ , $\frac{27}{16}$ , $\frac{15}{8}$ , 2	Mixo Lydian Scale	
	Mecha Kalyani ?			Dorian Scale ?	
	Lydian scale			Hanumat-todi ?	
				Phrygian Scale ?	
				Sankarabharanam ?	
				Ionian Scale ?	

The individuality of the murchanas can be understood better when we consider the sruti difference between consecutive notes in each grama and how the sequence varies from one murchana to another. For the first murchana under madhyama grama the successive intervals between consecutive notes are  $\left[\frac{10}{9}, \left\{\frac{5}{4} \times \frac{9}{10} = \frac{3}{2}\right\}, \frac{4}{3} \times \frac{3}{2} = \frac{16}{9}\right]$  etc.

$\frac{16}{9}$ ,  $\frac{9}{8}$ ,  $\frac{10}{9}$ ,  $\frac{16}{9}$ , and  $\frac{9}{8}$ . The corresponding order in sruti values is 3, 4, 2, 4, 3, 2 and 4. It is interesting to note that the continued product  $\frac{10}{9} \times \frac{9}{8} \times \dots \times \frac{9}{8} = 2$  the interval between the first and last notes. Again the sum of sruti values 3 + 4 + ... + 4 = 22, the number in an octave. This is as it ought to be.

\* Gandhara is higher than antara gandhara in Kalyani, hence ?



Some consider  $\frac{4}{3}$  as *pratimadhyama* and not  $\frac{4}{5}$ . Since  $\frac{4}{5}$  cannot be fitted into the Sa-Pa or Sa-Ma relation ( $\frac{3}{2} \times \frac{5}{4}$ ) being  $Ga$ , of  $Ri$ . So it is put out of the regular order of *srutis* in table III and  $\frac{4}{3}$  is preferred.

Further it is interesting to note that the ten *srutis* from *sa* to *ma* when raised by the interval *pa* successively yield the ten *srutis*, from *pa* to *sa*. Of the remaining three *srutis*  $Ma_2$ ,  $Ma_3$  and  $Ma_4$ ,  $Ma_2$  and  $Ma_4$  yield  $Ri$  and  $Ri_2$ , ten notes below each of them, in the higher octave.  $Ma_3$  ( $\frac{2}{3}$ ) once again does not conform to the rule and forms an exception where as  $\frac{10}{27} \times \frac{3}{2} = \frac{5}{9}$  i.e.,  $Ri_1$  of the higher octave. However  $\frac{2}{3}$  has been chosen instead of  $\frac{10}{27}$  as stated already.

Again from table III it is clear that the interval between the *ekasruti* and *dwisruti* and between *thrissruti* and *chatusruti*, for all *swaras* is  $\frac{8}{9}$ , called a comma. But the interval between *dwisruti* and *thrissruti* *swaras* is  $\frac{2}{3}$  slightly higher than  $\frac{8}{9}$  and slightly lower than  $\frac{2}{3}$ . Whenever there is a change from the last *sruti* of the *swara* to the first *sruti* of the next *swara* *Sa* to  $Ri_1$ ,  $Ri_1$  to  $Ga_1$ , etc., the interval changes by  $\frac{2}{3}$  which is the full measure of a quarter *eka sruti*.  $\frac{8}{9}$ ,  $\frac{2}{3}$ ,  $\frac{2}{3}$ , these three are the quarter notes we come across. The lowest of them is the *pramana sruti* mentioned by Bharata in connection with the *Pa* of *Madhyama grama*.

The seven original *swaras* mentioned in table III have their origin in the *udatta*, *anudatta* and *swarita* varieties of chanting Veda, particularly *Sama-Veda*. These seven notes are distinguished as pure or *suddha*. All other notes or *srutis* which have their origin in popular or secular music, as opposed to vedic or religious music, are termed *vikruta* (strange or contaminated.)

2. *Gramas*:—These are three in number and represent simple scales or modes of music consisting of only *suddha* notes, starting with *Ga*, *Ma*, and *Sa* respectively and going down the scale thus—

(i) *Ga Ri Sa Ni Dha Pa Ma*

(ii) *Ma Ga Ri Sa Ni Dha Pa*

and (iii) *Sa Ri Ga Ma Pa Dha Ni*

These three are called *gandhara*, *madhyama* and *shadja gramas* respectively. The first two are derived from vedic music and the last from secular music. *Gandhara grama* being the most ancient was extinct even at the time of Bharata. According to Bharata *Pa* in *madhyama grama* is one *pramana sruti* lower than *suddha panchama* and therefore is  $Ma_1$  in table III, a comma lower than *Pa*.

These *gramas* must have been the modes, religious and secular respectively pre-valent among the ancient Aryans when they began to live together forming *gramas* or villages.

The *madhyama* and *shadja gramas* can be expressed in a convenient and useful form in terms of frequency ratios or intervals.

Madhyama grama in the descending order of frequency or Avarohana Krama	Ma	Ga	Ri	Sa	Ni	Dha	Pa	Ma	Tab.
	$Ma_1$	$Ga_1$	$Ri_1$	Sa	$Ni_1$	$Dha_1$	$Ma_2$	$Ma_1$	III
	$\frac{4}{3}$	$\frac{3}{2}$	$\frac{10}{9}$	1	$\frac{8}{9}$	$\frac{5}{6}$	$\frac{2}{3}$	$\frac{3}{4}$	„

The frequency ratios or intervals of notes in the lower octave are half the ratios of corresponding notes in the higher octave. So  $Ma_1$  has an interval  $\frac{1}{2} \times \frac{4}{3} = \frac{2}{3}$ . The other three ratios are similarly obtained.

Madhyama grama in the ascending order of frequency or Arohana-Krama	$Ma_1$	$Ma_2$	Dha	$Ni_1$	Sa	Ri	Ga	$Ma_1$
	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{5}{6}$	$\frac{8}{9}$	1	$\frac{10}{9}$	$\frac{3}{2}$	$\frac{4}{3}$
	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{5}{6}$	$\frac{8}{9}$	1	$\frac{10}{9}$	$\frac{3}{2}$	$\frac{4}{3}$

These ratios are with reference to *sa* taken as unity. But since the series does not begin with *sa* but with  $Ma_1$  ( $\frac{2}{3}$ ) it is convenient and useful to express these intervals with reference to  $Ma_1$  taken as unity i.e. by making  $Ma_1$  the *adhara sruti*.  $\frac{2}{3}$  multiplied by  $\frac{3}{2}$  gives unity. Hence to keep the relative values unaltered each interval has to be increased one and a half times. Thus the series can be written—

#### Madhyama grama

- 1,  $\frac{10}{9}$ ,  $\frac{5}{6}$ ,  $\frac{4}{3}$ ,  $\frac{3}{2}$ ,  $\frac{5}{3}$ ,  $\frac{16}{9}$ , 2 — Arohana Krama.
- 2,  $\frac{16}{9}$ ,  $\frac{5}{3}$ ,  $\frac{3}{2}$ ,  $\frac{4}{3}$ ,  $\frac{5}{6}$ ,  $\frac{10}{9}$ , 1 — Avarohana Krama.

It is easy to note from table III that for *Shadja grama* we have:

- 1,  $\frac{10}{9}$ ,  $\frac{3}{2}$ ,  $\frac{4}{3}$ ,  $\frac{3}{2}$ ,  $\frac{5}{3}$ ,  $\frac{16}{9}$ , 2 — for Arohana
- 2,  $\frac{16}{9}$ ,  $\frac{5}{3}$ ,  $\frac{3}{2}$ ,  $\frac{4}{3}$ ,  $\frac{3}{2}$ ,  $\frac{10}{9}$ , 1 — „ Avarohana

It may be that in the *grama* mode of singing the tunes have been confined either to the ascending or descending order of notes of the *grama*. The extension of the range of the time to include both *arohana* and *avarohana* must have been the next stage of development.

3. *Murchanas*: The characteristic musical effect produced, when the *arohana* and *avarohana* of a *grama* are sung together in succession, is called a *murchana*. Each *grama* can be developed into seven different *murchanas* by successively making each one of the seven notes of the *grama*, the *adhara sruti*. The musical feeling varies with each such variation and the ear can easily distinguish the different *murchanas*. These may be taken as the earliest forms of *ragas*.

♠Nishada in the lowest octave or *mandra sthayi* is written thus—Ni with a dot below; in the middle octave or *madhya sthayi* it is written thus—Ni without a dot and in the highest octave or *tara sthayi* as Ni with a dot above. This is the notation adopted.



mixed up with the touches or *kalas* of Hindustani or Uttar *desa* ragas—like *Pharaz*, *Kamas* and *Kapi*—are called *Desi* ragas.

This classification came into use about the 13th century A. D. after the music of India split up into the two distinct styles, Hindustani, and Carnatic.

(e) *Stri, Purusha, Napumsaka* ragas : This differentiation is older than the above system and belongs to about the tenth century. This classification depends on the *bhavas* or mental pictures produced by the ragas. A peculiar connotation defined in *sanskrit slokas*—is evolved for each raga. Some ragas are deemed as masculine, some feminine and some neither. *Purusha* and *Stri* varieties are called ragas and *raginis* respectively. Beautiful paintings illustrating in colours the descriptions in *Sanskrit* verse of the various ragas and *raginis* have been drawn by the *Rajaput* School of painters and they form an interesting study.

(f) *Marga-Desi* system. This is the oldest classification known. Ragas used in sacred music are *marga*. *Ratnakara* mentions 264 such ragas and adds that many went out of use and that the ragas current in the present time were all *desi*-ragas. As a matter of fact, five systems of classification mentioned above belong only to *desi* ragas. Just as *gandhara* and *madhyama* *gramas* dwindled out and were absorbed by *shadja* *grama*, so also were *marga* ragas absorbed into *desi* ragas.

**Contribution of Andhra to the *Desi* system.** It may be remarked that *marga* music belonged to the Aryans and *Desi* music to the original inhabitants of India called the *Anaryas* who belonged to a different type of civilisation. As the two races began to live together more and more intimately the distinction slowly vanished and the *marga* music gradually lost

its individuality and was absorbed into the more powerful and ever growing secular or popular *desi* music. This transformation and blending is only a phase of the history and progress of civilisation. *Matanga's* treatise on music—*Brihaddesi* written about the eighth century gives details of the growth of the *desi* ragas by absorption from different *Desas* and localities. Perhaps the name *Brihaddesi* signifies this growth and swelling up of the *desi* system. *Matanga* mentions the following tribes from whose music *desi* ragas were appropriated—*savaras*, *pulindas*, *cambhojas*, *vangas*, *kirathas*, *bahlikas*, *Andhras* and *dravidas*. He mentions that the tunes of these tribes which range over only four notes of the gamut are not good enough to be recognised but makes an exception in the case of *dhruvas* (*daruvulu*) as being good enough in the exposition of the drama. We come across these *dhruvas* today in *yakshaganas* and *Vidhinatakas*. These *dhruvas* are mentioned in the *prabandhadyaya* of treatises on music.

Further, *Sangitaratnakara* mentions *Andhri* as one of the eleven *jatis* of *madhyama grama*. The characteristics of *andhri* are mentioned and illustrated, with proper notation, by a song in praise of *Siva*. *Bharata* also mentions this *Jati-andhri*.

Raga is the soul of Indian music. *Ragalapana* is the elaborate rendering of abstract music based on a particular scale. It is the march of music amidst a particular of number notes over a range of three octaves or *sthayis*, characterised and limited by specified *sancharas* in *arohana* and *avarohana* using certain notes as *graha*, *amsa* and *nyasa swaras* and embellished by different *gamakas*. In short, raga expresses the individuality and genius of Indian musical art and stands out unique in the world of music.

❖ *Gamakas* are characteristic movements of notes which produce a variety of pleasing effects.



## 5.7 The Flute and its Theory

### THE FLUTE AND ITS THEORY

3

ments have been very much improved from time to time. The introduction of "Jivali" into the Veena is one of the marvellous achievements in practical music. The richness of the sound is by that means very much improved as the suppression of notes having the plucked point as a node, is avoided. The flute was known to India chiefly as an accompaniment to music but it was brought recently into the fore-front by that great Master-artist the late lamented Sarabha Sastrigal of Kumbakonam. The Mridanga had attained a unique position in our music performances. A very ingenious method of loading the drum-head transforms the unharmonic overtones into a series of harmonics. It is thus a matter of pride that Indian genius had been responsible for the raising of the musical value of these three groups of instruments to the highest level.

(The second of these namely the *flute* is the subject for the evening.) The flute is the simplest among musical instruments. Though simple and cheap it is exquisite in quality and the art of flute-playing has been developed to a considerable complexity, to be able to express the various shades of music. The agility and the ability that can be displayed in the art of flute-playing are marvellous. Flute can be adapted to all kinds of music and is particularly useful in fast music. The musical possibilities of the flute are immense. The note given out by the flute, particularly when sounded softly, is the simplest compared with those given by other musical instruments. The significance of this state-

ment will be explained below. This peculiar quality of the flute-note gives the flute an expression of its own. "The poignant expressiveness of the stringed instruments is in great contrast to the gentleness of the flute-note". Berlioz says, "If it were required to give a sad air, an accent of desolation and of humility and resignation at the same time, the feeble sounds of the flute's middle register would certainly produce the desired effect." On the other hand, on account of its pure and light quality of tone, the flute is very well suited to music of the gayest character. "Sweet and tender music is best rendered with the flute", and at the same time it is most potent in invoking the loftiest emotions of human nature. No wonder, therefore, it adorned the hands of Lord Sri Krishna. (May His blessings be upon the Academy)

I will now try to give here an idea of the physical principles underlying the flute. Before doing so, I shall give you some introductory ideas regarding the production and propagation of sound in general. Bodies in a state of rapid vibration emit sound. A sounding body vibrates to and fro, about its position of rest. Hence it alternately pushes and pulls back the medium in contact with it. Rapid pulses of compression and rarefaction are alternately produced in the medium, ordinarily air. These pulses travel in all directions with a definite velocity ( $v$ ), which is 1100 feet per sec. in air.

As sound travels in air we have regions of compression and rarefaction at equal distances apart. The distances between

- vi. Different modes of vibration possible.
- vii. A number of slides illustrating the importance of the quality of music.
- viii. Acoustic spectrum of the flute-note explaining the different note qualities.
- ix. The effect of opening the holes with fingers.
- x. Slides illustrating the production of the edge-

note at the mouth-hole of the flute and the control which the body of the flute has upon it.

xi. How the various notes of the 'Hari Kambhoji' Raga are produced by a flute and the calculations of the mouth and finger hole corrections.

xii. Slides to illustrate the Mathematical Theory of the Flute and the practice thereof.



7) The nearest distance between two points of the same degree of compression or rarefaction is a wave length ( $\lambda$ ) and is called a wave. Points with no degree of motion or which are at rest, are called nodes. Points with maximum motion, which lie midway between two consecutive nodes are called anti-nodes.



^ The number of times the body vibrates in a second and

4

# THE JOURNAL OF THE MUSIC ACADEMY

consecutive compressions or rarefactions are called wave-lengths( $l$ ). The number of compressions that pass any fixed point in the medium is ~~also the number of pulses that pass the point per second, and this is~~ called the (vibration) frequency ( $n$ ) of the sounding body;  $v=nl$  gives the relation between the three quantities.

Different points in the medium have different degrees of compression and rarefaction. The condition of the points is sometimes better understood by noting their displacement, due to compression and rarefaction, from their position of rest. The graphical representation of the displacements of the different points takes the familiar form of a simple progressive wave.



Displacements to the right are represented by lengths below the horizontal and those to the left by lengths above the horizontal. Hence a point of maximum compression corresponds to the point C, on the left of which, particles are displaced to the right and on the right of which, particles are displaced to the left. A similar consideration holds for a point of rarefaction R. Places of no displacement are called *nodes* and the points midway between consecutive *nodes* are points of maximum displacement and are called *antinodes*.

A wave is progressive and unlimited in an endless medium. In a limited medium like a column of air closed at one end and open at the other, the wave is limited by this length, being reflected successively at the two ends. Two wave trains move in opposite directions and a steady state of vibration is set up. The open end is an *antinode* and the closed end is a *node*. If a tube is open at both ends, each end is an *antinode*. The point of maximum ampli-

tude does not coincide with the open end but is slightly above it. The excess of length is 0.6 times the radius of the bore of a cylindrical tube. The note given by a tube open at one end only, differs from the note given by a tube open at both ends. What this difference is due to will be considered in some detail. A column of air, in a cylindrical tube open at one end only, can vibrate as a whole and the sound given out has the lowest possible frequency. It is possible for the column of air to vibrate in 3, 5, 7 etc., equal parts and the corresponding sounds have frequencies 3, 5, 7 etc. times that of the fundamental i.e., the lowest frequency possible. If  $n$  is the frequency of the fundamental,  $3n, 5n, 7n$ , etc., are the frequencies of the other notes and they are called the higher harmonics. One point must be made clear. When such a column of air is vibrating fundamentally i.e., the whole length as one, it is found to vibrate simultaneously also in the other possible forms i.e., it is found also to vibrate in 3, 5, 7 etc., equal parts. So it is clear that along the fundamental note, the higher harmonics are also present and the sensation produced is not due to the simple vibration, the fundamental alone. Anyhow the loudness of the various harmonics decreases rapidly with their number, i.e. the note  $3n$  is less loud than the note  $n$ ,  $5n$  is less loud than  $3n$  and so on. So the predominant note is the fundamental. But the simultaneous presence of the higher partials gives a different quality to the note. This quality of a note given by any sounding body is thus determined by the particular harmonic, that are attending on the fundamental. It is this quality of a note that gives it a character of its own. It is on account of these different qualities of notes, that we are able to distinguish the notes given out by different musical instruments, even when

movement or  
amplitude



^ The number of times the body vibrates in a second and

4

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amplitude



the fundamental note is the same. The quality of various human voices is different and that is why we are able to distinguish one voice from the other.

In the case of a column of air open at both ends, along with the fundamental  $n$  all the harmonics  $2n, 3n, 4n, 5n$ , etc., are present, their loudness decreasing quickly in the order. Thus it is clear that the accompanying harmonics are more numerous in this case than in the case of a tube open at one end only. Hence the sound given out by a column of air open at both ends is richer in harmonics and hence is said to be richer in quality.

Various apparatuses were devised to study the musical quality of sounds given out by different musical instruments. It is not possible to mention all the results of such a study. It may be stated that the notes of a plucked string are very rich in quality, whereas the notes of a bowed string are not so rich. Those of a flute when gently blown are the simplest in quality, with almost no trace of an accompanying harmonic. Even, otherwise, the second harmonic ( $2n$ ) alone, is just prominent and on the whole the flute note is very simple in quality when compared to those given by other musical instruments. It is on account of this peculiar quality of the flute note, that sweet, tender and sad music can be rendered so well by the flute.

In the case of a flute, we have a tube open at both ends, which is the same as saying, we have an air column open or free at both ends. The mouth hole is the open end on one side. Starting somewhere near the middle of the tube we have generally eight finger holes, more or less equally spaced and almost of the same diameter. Everyone is familiar with what is called fingering. When all the eight fingerholes are closed the flute gives the lowest note when gently blown,

because the vibrating air column, from the centre of the mouth hole to the end of the tube, is the longest. If the hole next to the open end is not closed, the vibrating length of the air column decreases and the note given rises in frequency. Thus by opening the finger holes in order, the notes given out rise in frequency.

What is it that is really happening when a note is produced on a flute? The answer to this simple question is, however, not a simple one. To understand therefore the production of the different notes by the flute, it is convenient to discuss the matter in two stages, viz (i) the origin of the sound and (ii) its maintainance.

#### (i) Edgetones.

By blowing a steady jet of air through a slit formed by the two lips, against the top edge of the mouthhole of the flute, sound is produced more or less in the way in which sound is produced by blowing into a key-hole. This sound is called an edge-tone. The frequency of the note depends on the velocity of the jet of air and increases with it. As the velocity is slowly increased the frequency of the edge-tone is also slowly increased. The frequency of the edge-tone is also controlled by the distance between the lips and the top edge of the mouth hole. This is why we often find a flute-player adjusting that distance, in producing small changes in frequency or of pitch. From this it would appear as if the frequency of the edge-note and therefore of the flute note, also increases as the velocity of the jet of air is increased. This, as every one knows is not the case. Though the velocity of blowing is gradually increased, the frequency of the flute note remains steady and when the velocity reaches a particular value, the frequency of the flute-note



*Footnote*  
 X Sarabha Sastriar had two flutes one for Jodi Raga and the other for Kcey bhoji naga. He gave the Jodi mela flute to his pupil palladam Sangeethan.

FOLK SONG IN THE USSR

7

### Harikambhoji Mela.

The ratios of the frequencies as obtained experimentally with the help of a Sonometer or Monochord, indicate clearly that the scale of musical notes is the one corresponding to Harikambhoji Raga. X According to the simple formula  $v=nl$  given above, since  $v$  is constant for the air in the flute,  $n$  must vary inversely as the length of the vibrating column of air. The point corresponding to an anti-node is not mechanically fixed at the centre of the hole which forms the boundary of the column, as was already mentioned in the case of the open end of the tube. With a number of finger holes, one by the side of the other, it is not possible to apply the same law viz. adding 0.6 R which holds in the case of a single and wide open end. Hence the finger hole and the mouth hole are to have some other corrections which are peculiar to them. These are called  $m$  and  $f$  and have been calculated empirically. The rule employed was that the total lengths of the vibrating air columns, were inversely as the frequencies of the notes produced. The total length = actual length of the air column, +

mouth-hole correction + finger hole corrections. Taking two observations at random,  $m$  and  $f$  were calculated, these values were applied in the other observations made and the ratios of the vibrating lengths were also calculated, in those cases. The calculated and observed ratios were found to agree. Thus the validity of the method of obtaining the mouth-hole and finger-hole corrections was experimentally established.

The Mathematical Theory of the flute was not attempted for a long time. But recently the Theory of Alternating Current Electricity in its present-day practical applications in Telephony, has given a start in the working out of the mathematical theory of the flute. Some work has been done and the agreement between theory and practice is not yet very satisfactory. To subject the agility of the fingering of the flute player, to exact mathematical analysis, is really a task and perhaps we shall have to wait long before we can expect a rigorous and accurate mathematical analysis of the theory of the flute.



suddenly jumps to the octave i.e. frequency  $n$  suddenly changes to  $2n$ . Why then should the edge-note rise in frequency and not the flute-note? Can it be so? How is that possible?

### (ii) Edge-tone Maintainance.

It is in answering these queries we have to consider the effect of the body of the flute i.e. of the air column from the mouth-hole to the nearest finger hole open. It is the effect or reaction of this column of air that is responsible for the maintainance of the flute-note as heard. If there were only the edge of the mouth-hole, with a jet of air blowing against it and if there were no air column next to it, the frequency of the edge-tone does increase gradually with the velocity of the jet. This was experimentally demonstrated. But here in the flute we have a column of air next to the edge, which acts as a drag on the sound impulses caused by blowing against the edge. The air, surrounding the edge and producing the edge-tone, is said to be coupled with the air-column of the flute. The mass of this column of air is considerably greater than that producing the edge-tone. In a coupled system, it is a law that the more massive is the dominant. Therefore the column of air asserts itself and refuses to yield to all the impulses given by the edge-tone. The column of air dances in tune only to such edge-tone-frequencies that are natural to it. The frequencies natural to a column of air open at both ends are as stated above, the fundamental ( $n$ ), the octave ( $2n$ ), the twelfth ( $3n$ ) etc. So when the edge-tone agrees in frequency to the fundamental of the column of air in the flute, we hear that note ( $n$ ). When the velocity of blowing is increased and the frequency of the edge-tone rises, the column of air refuses to respond to any frequency other than  $n$  until the frequency of the edge-tone reaches  $2n$ . This is how

the jump to the octave occurs and then the flute is said to be 'overblown'. This is how the higher notes of the musical scale are produced in the flute.

### Sarabha Sastriar's Flute.

I was extremely fortunate in procuring a flute used by the late Sarabha Sastriar of Kumbakonam, through the courtesy of his elder brother M. R. Ry., Rao Saheb T. V. Sivakumara Sastriar and his nephew Mr. K. S. Viswanatha Sastri, Advocate, High Court. With the help of Miss Lalita, a Senior Honours student who can play on the flute, I was able to fix up the scale of music when the notes were played in succession. The accompanying diagram will make it clear what notes were produced and how.

Sa	o	● ● ● ● ● ● ● ●	
Ri	o	● ● ● ● ● ● ● ●	
Ga	o	● ● ● ● ● ● ● o	
Ma	o	● ● ● ● ● ● o o	
Pa	o	● ● ● ● ● o o o	Pa
Dha	o	● ● ● ● o o o o	Dha
Ni	o	● ● ● o o o o o	Ni
Sa	o	● ● o o o o o o	Śa
Ri	o	● o o o o o o o	
Ga	o	o o o o o o o o	
Ma	o	o ● ● ● ● ● ● ●	

over-blown

Notes ranging within two octaves were thus produced. Śa belongs to the lower octave. Sa belongs to the next or middle octave and Śa belongs to the higher octave. In the top row all the finger holes are closed and the mouth-hole is partly closed by the lip. In the last but one row all the holes are open, the mouth hole as well as all the finger holes.

\* The present Hon. Jt. Secretary of the Academy and the Manager of this valuable Journal.



## 5.8 The Place of Bhava in Music [October 10, 1957]

**MUSIC** was originally considered to be an auxiliary to drama. Dramatic representation appeals both to the eye and the ear and utilises poetry and music.

Bhava is feeling, emotion or sentiment. Consideration of Bhava forms a part of aesthetics. Bhava was originally discussed in connection with the dramatic art, from the point of view of the actor and that of the spectator, as part of the analysis of the psychological process involved in the enjoyment of drama.

When we witness a dramatic performance or listen to a musical concert, the acting or the singing causes certain mental conditions and Bhavas. We enjoy the performance. We have an aesthetic experience. We have rasanubhava. Rasa strictly means that which is relishable. Rasa is the foremost of all the essentials of a fine art. It often happens when we listen to music that everything seems to be technically right but we still feel that there is something wanting and we are not satisfied. What we have really missed is the aesthetic experience or rasa.

The experience of rasa and its manifestation is a result of the correlation of a number of bhavas or mental states. That is why bhava is considered to be the vehicle of rasa. Generally speaking rasa results from bhavas. But, at the same time, it has to be pointed out that rasa is all in all and is the primary source of all bhavas. Abhinavagupta, an ardent exponent of rasabhava, states the Universe itself is nothing but rasa. "Tenarhasamayamevavis-wam."

Rasa is firmly seated in the soul of the cultured man—the rasika. The rasika may be a spectator, an actor or a musician. He is not simply the person who enjoys poetry or drama or music. "The quality of a rasika is an attribute of the excellence in man's personality which goes to make up the grace that distinguished his behaviour in society from that of another, who is wanting in it a nirasa." It is the full bloom of one's emotional nature and as such it enables him to get into other's moods—the power for sympathy. Sympathy is hridayasamvada or chittasamvada which enables us to enjoy a performance. A rasika is therefore called a sahridaya.

Rasa in its higher form or state is one and unitary. It is transcendental enjoyment. It is part of our soul or spirit and is enjoyed only in the spirit without name or form.

### Transcending Technique and Reaching to the Soul

## PLACE OF 'BHAVA' IN OUR MUSIC

By V. Appa Rao

In the next or lower state rasa assumes names and forms—Vira, Karuna etc. These different manifestations of rasa result from contact with the object of the world. This is the bhavana stage out of which the various bhavas are born.

### TWO ASPECTS OF BHAVA

Bhava has two aspects, that of the actor or performer and that of the spectator. Bhavas that are felt by the actor or performer are expressed in certain recognised ways—the three kinds of abhinaya—vāchika, āngika and sātāvika. The musician expresses his bhavas thus:—Vāchika, by voicing out the text or sahitya of the song with the appropriate intonation, emphasis and modulation; Āngika—by the various movements of his body and Sātāvika—by the involuntary changes produced in his manner due to the rise of emotion in him.

This emotion is the result of the situation into which the musician puts himself. He creates within himself the mental situation which forms the background of the song, tries to live the sentiments expressed therein, and experiences them. Out of such mental experience arise the bhavas appropriate to the situation. The listener who is a sahridaya identifies himself with the creative artist. His experiences are dependent on his capacity to identify himself with the situation; and the intensity of his feelings varies with the degree of such capacity. These considerations hold equally well with the musician.

The emotional appeal of a song may be considered to be made up of two parts (i) the sahitya bhava and (ii) Sangita bhava. Of these the musical appeal or sangita bhava is by far the superior. Tagore says, "Song is glorious in its own right. Why should it accept the slavery of words? Song begins where words end. The inexplicable is the domain of Music. It can say what words cannot, so that the less the words of the song distract the song, the better." Sahitya bhava belongs to the realm of intellect and reason whereas sangita bhava belongs to imagination and emotion and

even reaches higher up towards intuition and spirit.

### EFFECT OF MUSIC

Let us now consider how music produces such a profound emotional effect. It has a physical basis. The elements of music are tones, rhythm and melody. Tones or swaras have a harmonic relation between each other. The degree of pleasure due to consonance between two notes is correlated to the degree of fusion of the two notes.

Swaras must be pure, i.e. of correct intonation. Our ear may be apparently satisfied by a very approximate accuracy. But the ear is not the sole judge. It is with our mind that we cognise the inaccuracies in music. Even the slightest inaccuracy is perceived and tires us. Disregard of small differences in intervals has serious consequences in regard to the deeper effect of music. This is why sawarasuddhā and srutisuddhā are insisted upon and both these produce a great musical appeal.

Rhythm also has a high emotional value. It affects us deeply. Our bodily machinery is rhythmic in character. The fundamental physiological processes—breathing, pulsation etc., are rhythmic. The infinite variety of rhythm produced in tāla prasthāra and swaraprasthāra during the elaboration of musical exposition is amazing and has a great effect on the rhythm of our emotions and consciousness.

### MELODY

Melody affects us even more. An agreeable succession of single musical sounds is melody. Each musical note qualifies the aesthetic effect of the succeeding note. A musical composition is a complicated and magnificent musical structure built out of musical notes having intricate and subtle melodic relations to one another.

When music is rendered with the correct intonation, proper rhythm and melody, it produces a marvellous effect. "There is perhaps no other art whose pleasures of mere form are more marvellous in complexity, more intellectual in essence and in

quality, more pure." When we are absorbed in listening to such music we live temporarily in a world of our own, less obscure and far more enjoyable than the mundane atmosphere we are accustomed to live in.

The appeal of music is universal and that is why music is called the universal language. The infinite variety of bends and turns, the delicate differences in grace that constitute the complexity of music enable it to speak in a thousand different accents to thousand different listeners which no language even hope to express. Music stirs up our soul and renews and revives the reality dormant underneath. No wonder that Plato prescribed "gymnas for the body and music for soul."

Let us now consider how these considerations can be applied to the musical performances we attend, how far we derive musical experience and what are the disabilities if any.

It is only a gifted musician with a rich and sweet voice, a creative imagination and a cultured mind that can deliver the message of the song and carry the audience along with him.

Every concert performance does not give us full satisfaction. Ordinarily we find an overabundant display of dry technique, a competitive spirit of exhibitionism between the vocalist and the accompanists. This produces a melodramatic effect which is completely out of tune with the spirit of the song.

By changing the tempo natural for a kriti some singers produce wrong bhavas. Again the artist does not sometimes know the meaning of the sahitya and commits unpardonable mistakes which clearly show that he does not enter into the spirit of the song but mechanically repeats the sangathis he learnt.

AIR Vijayawada



Mayavaram Govindaraja Pillai who takes part in the Sangam Sammelan

ASVINA 28, 1879 SAKA, OCTOBER 20, 1957



# PLACE OF KRITIS IN KARNATAK MUSIC SYSTEM

(Continued from page 8)

and Neraval for the Kritis also. It was then that the Kritis of the Trinity, especially Tyagaraja, came in handy for these performers to introduce more and more new Ragas and compositions into the concert, and their own personal abilities while rendering Raga, Neraval and Swara.

Along with the growth in the volume of listeners, the performers had perforce to enlarge the less serious and lighter portion of the post-Pallavi portion of the performance. It was in this way that the lighter variety of classical music, like Javalis, etc., found a place in the platform concert.

The typical modern concert of today was organised only about sixty years ago. Even then the number of Kritis in the pre-pallavi portion was not as large as today. More than two-thirds of the concert from then on comprised authentically classical pieces of the Trinity and amongst them a majority of Tyagaraja's. One wonders whether those who are not conversant with a Karnatak concert will be able to understand and realise what a performance today would be without Kritis at all. A Kriti-



## 5.9 The Positive Back-ground of the Hindus [From Archana – 1984]

# The Positive Background of the Ancient Hindus

—Prof. V. Appa Rao.

In the Editorial of the Silver Jubilee Issue of 'Life' published in January 1961 the following statement is made. 'Scientists and humanists seem to have two cultures each of their own. The bond of common language between them has been broken in most Western countries. They are no longer speaking to each other. This mutual ignorance unfits the humanists for understanding the revolutionary aspect of their time and denies the scientists most of the cultural wisdom of the past'.

"Top scientific centres like M.I.T. and Caltech are insisting on rigorous training in the humanities, to offset "the barbarization of specialization."

This statement exactly fits in with the conditions existing in India. The cultures of (i) Sanskrit Pandits and Scholars and (ii) of Scientists and Technologists correspond to the two cultures mentioned above.

Ramesh Chandra Dutt stated, more than eighty years back, in a similar strain about the ridiculous plight of the present day Hindu student in regard to the ignorance of everything belonging to the Hindu Period and added that it was to be exposed by a critical and careful study of the relevant Sanskrit Literature. He wrote a little school book in Bengali on the Vedic Period

which was accepted as a text book in many schools in Bengal as early as 1878. With the intention of stimulating a desire in the modern man to enter into the spirit and inner life of the Ancient Hindus, he wrote a book on the Ancient Hindu Civilization and explained how our ancients observed Nature in its various manifestations, how out of that scientific curiosity arose their wonder and how, their primitive minds worshipped what was bright and glorious in nature - the bright sky (Dyu), the blushing dawn (Ushas) - the rising sun (Mitra), the glowing fire (Agni), etc.

It is well known that H.T. Colebrook, a mathematician and a most careful and accurate Sanskrit Scholar was the first to stimulate in the European savants a desire to elucidate Ancient Hindu Literature and History. Grimm, Humbolt, Weber, Max Muller, Wilson, Dr. Buhler and Dr. Thibaut were among such European scholars.

The modern educated man is particularly ignorant of the positive background of the Hindu Culture. Perhaps he believes that it is a blank and contains nothing scientifically worthy. I will now confine to this aspect of Hindu Culture.

### I. Mathematics and Astronomy

(a) **Sulva Sutras** :— Dr. Thibaut discovered Ancient Indian Geometry in the



Sulva Sutras (8th century B.C.) and showed how the construction of sacrificial altars according to fixed rules gave rise to geometry.

(b) **Rekhaganitam : (Geometry) :—** The reputed Sanskrit Scholar Jagannadha Panditaraya wrote in Saka 1640 a treatise on geometry, when he was the Asthana Pandit of Jayasimha, the Maharaja of Jaipur. Jagannadha Pandit was not only a great scholar in Sanskrit but was also well versed in the Parsi and the Arabic languages. He was an expert astronomer and geometrician. He translated into Sanskrit the Arabic astronomical treatise, Mijasti, and named it Siddhanta Samrat. He also translated Euclid's Five Books from the Arabic into Sanskrit—Rekhaganita. This book, contains more information than what we find in the English edition of Euclid's books. It gives the history and evolution of geometry-how it had originated in Egypt in the time of the Emperor Sesostris, how Theles of Miletus (640 B.C.) improved the science, how Anaxagoras, a disciple of Theles worked the quadrature of the circle, and how another disciple, the famous Pythagoras, travelled through India, Egypt and Italy and how he established an institute in his name at Tarentum in Italy. It is said that he declared that the earth was rotating on its axis and that the stars were fixed in the sky. He was considered as a mad man and was put to great trouble by the people and he died as a consequence. The progress of the science was traced upto Aristaeus of Athens who was the teacher of Euclid.

(c) **Jantar Mantar (Observatory) :—** Maharaja Jaisimha of Jaipur (1710 A.D.) was a keen astronomer and had built observatories at Jaipur, Ujjain, Banaras, Mathura and Delhi. The Delhi Jantar Mantar contains six instruments. The

Samrat-Yantra, a huge sundial, the Jai Prakash which represents the celestial sphere in two parts, the Ram Yantra which reads the altitude and the azimuth of stars, The Misra Yantra—containing a sun-dial, with two graduated semi-circles which represent the meridians of Greenwich. Zurich, Notkey (Japan) and Serichew (Pic. island in the Pacific) which enable us to tell the time at those places when it is noon at Delhi and vice-versa. There are pillars which represent the shortest and longest days of the year. The details of the construction of Jantar Mantar are given in Siddhanta Samrat of Jagannadha Pandita. A book in English is also published which gives the details about these observatories.

(d) **Aryabhatta (499 A.D.) :—** mentioned in his astronomical treatise, Aryabhattiyam, that the earth revolves round its axis.

(e) **Bhaskaracharya** of the 12th century A.D. was the great astronomer, (i) who wrote Siddhanta Siromani—which contained Goladhyaya, the geometry of the sphere. It is taught at the Banaras School of Astronomy. Sri Pidaparathi Subrahmanya Sastry and Sri Krishnamurty Sastri of Podagatlapalli, East Godavari Dt. have a wooden hollow sphere—made of circular ribs of polished black wood with various details marked in it. Sri D. Arka Somayajulu M.A. when he was a Research Scholar in the Madras University, nearly thirty years back, published a paper on the corrections of 'Variation' and 'Evection' pertaining to the motion of the Moon. He showed that these corrections calculated according to Bhaskara were very approximately the same as those calculated with the help of modern dynamical astronomy.

(ii) **Instantaneous Velocity** was conceived by Bhaskara and this was the basic idea of differential calculus, (Chelana Kalana).



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Bhaskara wrote the following books also :

(iii) **Lilayati** : This deals with areas, volumes, shadows and similarity of triangles; permutation and summation of different groups of fixed numbers etc. This has been translated into Persian. It was also translated into English by H. T. Colebrook and J. Taylor. A Telugu translation of the book with 'Upapatti' (explanation) by Sri Pidaparthi Krishna Murty Sastry is available.

(iv) **Bijaganitha** (Algebra) : It contains a section on quadratic equations. This was translated into Persian. E. Strachy translated it into English.

(Most of the information given above about Mathematics and Astronomy of the Hindus can be found in the 'Ganaka Tarangini' (Sanskrit) of Sudhakara Dwivedi. This is translated into Telugu by Sri Pidaparthi Subrahmanya Sastry.)

(f) Further, some publications on the Positive Background of the Hindus were brought out by Sudhindra Natha Vasu at the Panini Office, Bahadurjang, Allahabad. Two of them are.

(i) The Positive Background of Hindu Sociology, Book II, Part I, Political, Vol. XXV.

(ii) The Vaiseshika Sutras of Kanada, with English Commentary.

This contains molecular and atomic conceptions.

## II. Science and Engineering

(i) **Sanatana Vignana Samuchayam** by late Sri C. Venkata Ramanarya, (Retired Inspector of Sanskrit Schools, Mysore Government, published in 1945) is in Sanskrit and the information is collected from

several Sanskrit works. It is intended for cultural propagation.

The book deals with many scientific topics. The following items give an idea of its comprehensiveness. Cosmogony, atomic theory, formation of the different strata of the earth, things created from nebulae, indistinct sensations in inanimate objects, distinctions in rocks, nature of Earth-exterior and interior changes, soils, fossils, volcanoes and earthquakes, geological time scale, Solar Energy, examination of precious stones, mineralogy, ores and quarries, mercury and metallurgy, crystals and crystallography, pearls and corals, alchemy and chemistry, laboratory and factory methods, evolution and revolution of the world, Physics, Chemistry, Astronomy, Geology, Botany, Zoology.

(A copy of the book in Nagari Characters is with Sri P. S. Narayana, 'Mines House', Bangalore-2. He was good enough to send me this information. I have secured a copy. And it is being studied for translation into Telugu and English.)

(ii) **The Famous Iron Pillar** which is now at Delhi is a solid shaft of wrought iron more than 16 inches in diameter and nearly 24 feet in length. Although exposed to storms and the sun for over 1500 years, its smooth surface has not been corroded even to the slightest degree. The inscriptions on it are sharply defined and are as legible as they were on the day they had been first cut. The chemistry of the composition of the pillar is a wonder and the casting of such a long solid shaft is a commendable feat of technology.

(iii) **Sri P. C. Ray's two volumes (English) on the Chemistry of the Hindus** are full of very valuable information.

(iv) **Flying machines** : Sri M. K. Ranganathan, Chief Engineer P.W.D. (Retired)



published on (9-2-'48) the First Mahodaya Day after India had won independence, "A Mahodaya Art Souvenir". The contents of the Souvenir are mostly extracted from various old literatures and recent research publications. This pamphlet contains a description of the flying machine referred to by King Bhoja (11th century A.D.) in his *Samarangana Sutradhara*, 31st chapter. Five Sanskrit verses were quoted and the general purport was given in English—

"The flying machines referred to appear to work on mercury and mercury vapour as the working fluid. The machines are made of very light and tough wood and the general shape is that of a bird. In its body is fixed the prime-mover working on mercury. Heat is applied from an external source below the mercury bottle. The engine unit seems to be of the hot air engine type". The mercury vapour condenses and gets back and is used over and over again. I cannot assert from the description that propellers of the modern type were used but it is clear that the two wings move and flap, causing the movement of the whole machine in air". The machine can travel far and high..... "There seems to be some arrangement to bye-pass the exhaust through a siren and a sound very much like the roaring of a lion was produced. When the machine flies over enemy's camp and the lion-roar siren is also worked, it is said that the war elephants of the enemy's camp take to flight without heeding their mahouts with their *ankusas*."

(iv) In another chapter of the Souvenir is described a feat of Engineering—the formation of an artificial lake—the Bhoja Saras—covering an area of 250 sq. miles—the greatest of its kind in India in the 11th Century A.D. where two wonderful Dams were constructed. "The skill of the artisans of the period can be judged from the fact

that the stone blocks of the dam were laid, one on the other, without mortar, but get their edges, fitted so truly that the bund was absolutely water tight". This great work of Hindu engineering, was destroyed 400 years after it was built.

(vi) The pamphlet also gives (chapter II) an account of the Temple of Saraswati (the University College of Dharapuram), how the University was erased and a mosque was constructed on the same site, using the stone pillars and slabs of the demolished buildings, how by a fortunate chance some slabs removed from the structure of the mosque were found to contain two long inscriptions—*Sarpabandhams*—relating to the method of teaching Sanskrit grammar in those days—following the ancient treatise *Katantra* (Kalapa or Kaurama) in place of Panini's Sanskrit grammar. *Katantra* is still a text book in Bengal.

### III. Medical Science

The XIV World Health Assembly-Souvenir published by Swasth Hind in February 1961—New Delhi, contains valuable articles on (1) Public Health and Sanitation in Ancient India and (2) Indian Systems of Medicine. Here are some salient points from the articles.

**1. Public Health and Sanitation in Ancient India.** (a) In the great Mauryan Empire (4th century B.C.) under Public Health the following are mentioned.

(i) Magasthenes refers to six committees in cities, in charge of foreigners when they were sick, births and deaths among high and low, ante-natal care of pregnant women etc.

(ii) Kautilya's Arthasastra gives elaborate details regarding principles of hygiene, health and welfare of the royalty and the common people; about orphanages, where



food and education were given; about houses for the poor and the infirm; work houses for widows, cripples and old women; about the health of workers and about discouraging child labour; maternity benefits to female slaves and labourers and about child and women welfare centres. Kautilya, deals also with pure water supply, drainage; scavenging; strict rules for preventing nuisance and adulteration of foods, etc. He deals also with safeguards against epidemics, fire, floods, famines, snakes, tigers and demons.

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This is translated into Telugu by Sri Pida-parthi Subrahmanya Sastry.)

(f) Further, some publications on the Positive Back-ground of the Hindus were brought out by Sudhindra Natha Vasu at the Panini Office, Bahadurjang, Allahabad. Two of them are,

(i) The Positive Background of Hindu Sociology, Book II, Part I, Political, Vol. XXV.

(ii) The Vaisesika Sutras of Kanada, with English Commentary.

This contains molecular and atomic conceptions.

## II. SCIENCE AND ENGINEERING

(i) **Sanatana Vignana Samuchayam** by late Sri C. Venkata Ramanarya, (Retired Inspector of Sanskrit Schools, Mysore Government, published in 1945) is in Sanskrit and the information is collected from several Sanskrit works. It is intended for cultural propagation.

The book deals with many scientific topics. The following items give an idea of its comprehensiveness. Cosmogony, atomic theory, formation of the different strata of the earth, things created from nebulae, indistinct sensations in inanimate objects, distinctions in rocks, nature of Earth-exterior and interior changes, soils, fossils, volcanoes and earthquakes, geological time scale, Solar Energy, examination of precious stones, minerology, ores and quarries, mercury and metallurgy, crystals and crystallography, pearls and corals, alchemy and chemistry, laboratory and factory methods, evolution and revolution of the world, Physics, chemistry, astronomy, Geology, Botany, Zoology.

(A copy of the book in Nagari Characters is with Sri P. S. Narayana, 'Mines House', Bangalore-2. He was good enough to send me this information. I have

secured a copy. And it is being studied for translation into Telugu and English.)

(ii) **The Famous Iron Pillar** which is now at Delhi is a solid shaft of wrought iron more than 16 inches in diameter and nearly 24 feet in length. Although exposed to storms and the sun for over 1500 years, its smooth surface has not been corroded even to the slightest degree. The inscriptions on it are sharply defined and are as legible as they were on the day they had been first cut. The chemistry of the composition of the pillar is a wonder and the casting of such a long solid shaft is a commendable feat of technology.

(iii) **Sri P. C. Ray's two volumes (English) on the Chemistry of the Hindus** are full of very valuable information.

(iv) **Flying machines** : Sri M. K. Ranganathan, Chief Engineer P.W.D. (Retired) published on (9-2-'48) the First Mahodaya Day after India won independence, "*A Mahodaya Art Souvenir*". The contents of the Souvenir are mostly extracted from various old literatures and recent research publications. This pamphlet contains a description of the flying machines referred to by *King Bhoja* (11th century A. D.) in his *Samarangana Sutradhara*, 31st chapter. Five Sanskrit verses were quoted and the general purport was given in English—

"The flying machines referred to appear to work on mercury and mercury vapour as the working fluid. The machines are made of very light and tough wood and the general shape is that of a bird. In its body is fixed the prime-mover working on mercury. *Heat is applied from an external source below the mercury bottle.* The engine unit seems to be of the hot air engine type" The mercury vapour condenses and gets back and is used over and over again. I cannot assert from the description that propellers of the modern type were used but it is clear that the two wings move and



flap, causing the movement of the whole machine in air". The machine can travel far and high....."There seems to be some arrangement to by-pass the exhaust through a siren and a sound very much like the roaring of a lion was produced. When the machine flies over enemy's camp and the lion-roar siren is also worked, it is said that the war elephants of the enemy's camp take to flight without heeding their Mahouts with their *ankusas*."

(iv) In another chapter of the Souvenir is described a *feat of Engineering*—the formation of an artificial lake—the Bhoja Saras—covering an area of 250 sq. miles—the greatest of its kind in India in the 11th Century A. D. where two wonderful Dams were constructed. "The skill of the artisans of the period can be judged from the fact that the stone blocks of the dam were laid, one on the other, without mortar, but get their edges fitted so truly that the bund was absolutely water tight". This great work of Hindu engineering, was destroyed 400 years after it was built.

(vi) The pamphlet also gives (chapter II) an account of the Temple of Saraswati (the University College of Dharapuram), how the University was erased and a mosque was constructed on the same site, using the stone pillars and slabs of the demolished buildings, how by a fortunate chance some slabs removed from the structure of the mosque were found to contain two long inscriptions—*Sarpabandhams*—relating to the method of teaching Sanskrit grammar in those days—following the ancient treatise *Katantra* (Kalapa or Kaumara) in place of Panini's Sanskrit grammar. *Katantra* is still a text book in Bengal.

### III. MEDICAL SCIENCE

The XIV World Health Assembly-Souvenir published by Swasth Hind in

February 1961—New Delhi, contains valuable articles on (1) Public Health and Sanitation in Ancient India and (2) Indian Systems of Medicine. Here are some salient points from the articles.

1. Public Health and Sanitation in Ancient India. (a) In the great Mauryan Empire (4th century B. C.) under Public Health the following are mentioned.

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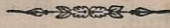
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## 5.10 The Genius of Tyagaraja [Indian Music Journal]

### THE GENIUS OF TYAGARAJA

By

SRI VISSA APPA RAO, GUNTUR

The cultural heritage of India is unique. Atma Vidya, the science of the self, among psychological and spiritual disciplines and music among fine arts were developed to an extraordinary degree and linked together in a profound manner. Music was considered to link up the physical with the meta-physical. It was recognised as a means to self-realisation. Tyagaraja had an honoured place among those that trod the path of musical experience to realise God.

*Tyagaraja*  
The music of Tyagaraja's compositions is irresistible and appeals equally to the upper classes as well as the masses. He conveys through his songs the truths and principles of meta-physics for the spiritual uplift of mankind. As a composer, singer, devotee and saint, Tyagaraja shed lustre on South Indian music and culture.

Tyagaraja was born on May 4, 1767 in the Tanjore district, at Tiruvarur, one of the cultural centres of Chola-desa. That was a bright period in the musical history of South India, a period of great revival brought about by the classical contributions of Kshetragna, Narayana Tirtha, Virabhadrayya, Sonti Subbanna and Sonti Venkataramanayya. It was during this propitious period that not only Tyagaraja but also Dikshitar and Syamasastri - the Musical Trinity of South India - were born at Tiruvarur, on the sacred banks of the Cauvery. Strangely enough, it was during

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Tirupati Venkataramana to rid him of the deep seated (loni) envious nature (matsara). He uses the lowest notes when reference is made to himself and his inner nature and immediately as he addresses Venkataramana, Lord of the Seven Hills, the pitch suddenly rises an octave higher striding across the intervening seven notes and then descends in measured steps.

In the Darbar Kriti 'Mundu venuka iru prakkala todai', Tyagaraja invokes Rama to protect him on all sides, in front (mundu), behind (venuka) and on both sides (iru prakkala). The Kriti is said to have been sung when Tyagaraja was attacked by robbers during his pilgrimage. The swara sancharas clearly suggest going forward, getting back and keeping a balanced middle line on either side. In 'Alakalallaladaga' in Madhyamavati, the beauty and grace of the swinging (allaladaga) of the forelocks of Sri Rama and the great exaltation of Viswamitra at that wonderful sight are described. When the word 'allaladaga' is sung, the musical notes swing to and fro and when the word 'pongeno' -exaltation - is sung, the note also is exalted.



this golden age of music that Haydn, Mozart and Beethoven reigned in Vienna, the musical capital of Europe.

While very young, Tyagaraja shifted along with his parents to Tiruvaiyar, where he lived for the rest of his life. Tiruvaiyar or Panchanada Kshetra was another place of sanctity and cultural importance. Tyagaraja inherited his devotional fervour from his father Ramabrahman who was a great worshipper of Rama and his musical talent from his mother and *Vina Kalahasti Pyga and his paternal grandfather* maternal grandfather, <sup>1</sup>Giriraja Kavi of Kalahasti. He took musical lessons under the famous Tanjore Asthana Vidwan, Sonti Venkata Ramanayya. After a general education in Sanskrit and Telugu, Tyagaraja was initiated into Rama Taraka mantra. According to tradition, he repeated the mantra 96 crores of times, over several years and at the end of it he had the glorious vision of Rama. In his ecstasy, Tyagaraja burst forth into his first song 'Bala Kanakamaya Chela' in Athana, a powerful popular rakti raga admirably suited for the passionate expression of his joy and wonderment at the vision of the beautiful and youthful form of Rama, following the sage Viswamitra into the forest, for the protection of the sacrifices from the ravages of Maricha and Subahu. Evidently, this grand spectacle of a key-incident of the Ramayana had profoundly impressed Tyagaraja and he described its grace and dignity in other songs as well, like

'Alakalallaladaga' in Madhyamavati and 'Sri Rama Jaya

Rama in Yadrupada Kanhada



Rama in traditional

Tyagaraja is the foremost among the composers of Carnatic music. His songs have a wide variety of form and type. Though he is reputed to have composed 24,000 songs, not more than 800 are available now.

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Some of them were intended for the daily worship of Sri Rama, and many others - Divyanamams - were composed for use in Bhajana Kutams. These two types were simple in style and were in popular rakti ragas. Tyagaraja was the author of a few musical plays: Nauka Charitra, a regular opera and Prahlada Bhakta Vijayam, a dance-drama of the Bhagavata Mela tradition. Tyagaraja not only respected and followed tradition in its various aspects but reformed and revolutionised musical composition and his contribution has been remarkable for its quality. He was a typical lyrical composer. Many of his Kritis were short and sweet expressions of the various moods of the poet-composer, each of them being a subjective outpouring of the heart dealing with a single emotion.



Tyagaraja revived neglected ragas like Kharahara-priya and Hari Kambhoji and composed several kritis, illustrating the unfathomed melodic sweetness and expounding all the intricate musical aspects of these and other well-known ragas. He composed most of his songs in the seven major ragas (mela kartas), Hari Kambhoji, Kharaharapriya, Dhira Sankarabharanam, Hanumathodi, Mayamalawagowla, Nata Bhairavi and Mecha Kalyani and in nearly 120 of their derivatives (Janya ragas). Tyagaraja's discriminating artistic genius employed only such ragas that had a distinct melodic individuality. Out of the 72 mela kartas of Venkatamakhi, he could select only 48 as music-worthy. And among these he concentrated his attention on only a few as mentioned above. He was not satisfied with singing old ragas. "The pleasure of singing the praise of Sri Rama in new ragas ("Vinta ragamula") is unparalleled" says Tyagaraja. He created many new ragas like Navarasa Kannada, Kuntala Varali, Ragapanjaram, Swaravali, Bahudari, Garudadhvani, and Jayantasri in



these seven major ragas and particularly in Hari Kambhoji.

A brilliant feature of Tyagaraja's art is the clear delineation of the distinctive characteristics of ragas which have nearly the same swara-krama (scale structure); for example, Gowla and Jaganmohini; Nayaki and Darbar; Suddha Bangala and Suddha Saveri; Syama and Pratapa Varali and Sowrashttra and Chakravakam. He dived deep into the mysteries of raga lakshana (intrinsic traits of the raga), the subtle variations of swaras and their subtler shades of intonation (Swara-Jati Bheda). Further, he emphasised the correct appreciation of 'Murchana Bheda'. Murchana is a succession of swaras which, when uttered, reveals in one stroke the individuality of a raga. It is not to be confused with the arohana and avarohana swara krama (order of ascent and <sup>dis</sup>sc<sup>c</sup>ent). Among the ragas in which suddha gandhara and nishada and shatsruti rishabha and dhaivata occur, Tyagaraja selected only those that have a distinct musical value. Very often, the kritis composed in these ragas are the only ones that illustrate the raga lakshana. Such kritis are generally very simple with a limited scope of elaboration. But they are very effective and the individuality of the raga employed is clearly delineated.



musical value. He did not achieve this masterly reform all at once but in definite stages. The earlier compositions such as 'Ela nee daya radu' in Athana, 'Dorukuna' in Bilahari, and 'Darini telusukonti' in Suddha Saveri were examples in which the weight and flourish of sahitya still lingered. But Tyagaraja excelled himself in the great Pancha-ratnas in Nata, Gowla, Arabhi, Sree and Varali. They were classic in form and style. Each one of them contained as many as ten charanas in swara and sahitya, bringing out magnificently in ordered and progressive swara patterns the entire form and colour of the raga. Very many of the later songs were couched in very few words and were very great lyrics. Kritis like 'Aa daya Sree Raghu vara' in Ahiri and 'Giripai' in Sahana are acknowledged masterpieces.

This great transformation

Prior to Tyagaraja, musical compositions (lakshya sangita) were recitative in character and sahitya (the text of the <sup>Composition</sup> lyric) predominated over sangita (the melodic line). Tyagaraja rescued musical composition from the tyranny of words. He was the pioneer in composing lyrical songs of the highest

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Composition



This great transformation of the Kirtana from the recitative to the lyric form was worked out by Tyagaraja by the employment of Sangathis, whereby he ingeniously introduced into the kriti the 'alapana paddhati' by which the music flowered out in an ordered fashion, through the pallavi, anupallavi and charanam. Sangathis are music-phrases and the order in which they succeed one another is highly artistic. "The first sangati is a simple melody, the next is a little elaborate; the next is still more elaborate; and so on, until the last brilliant sangathi presents in the compass of the same time-limit as the first sangathi, the maximum rhythmic liveliness and melodic fulness. All the sangathis glide into one another so easily and gracefully that they seem to be the natural evolutions and involutions

6.....



of one another." This great innovation affords the singer a great freedom and scope for mano-dharma - creative imagination.

Tyagaraja was broad-minded and catholic in his outlook. He assimilated the fine elements in other systems of music. His compositions in Yaman Kalyani and Amir Kalyani illustrate his appreciation of Hindustani music. He adopted a number of attractive tunes from European music and composed exhilarating songs like 'Ninu vina' and 'Paluku Kanda chakkeru' in Navarasa Kannada, 'Vinata suta vahana' in Jayanta Sena and 'Raminchu varevarura' in Suposhini. 'Ninu Vina' is in Rupaka tala.

The song describes how Tyagaraja is overwhelmed by looking at the beautiful form of Rama and by hearing the enchanting anecdotes about him. The surging of the ecstasy in rhythmic waves is well illustrated

in the second part of the anupallavi, wherein pure music is expressed without resort to words, indicating how words drop out in the higher reaches of emotion. The first part of the anupallavi in which minimum words are used amply illustrates the lyrical character of Tyagaraja's compositions and music comes in between every letter of every word.



Another feature of Tyagaraja's compositions is that they embody his ideas of music as an art and of its higher values. In kritis like 'Nadopasana', 'Sobhillu Saptaswara' and 'Mokshamu galada', he exalts and explains the high value of 'Nada' - pure sound - how it emanates, how it is an 'upasana' and a 'yoga', # a path leading to realisation. In the kriti 'Sogasuga' in Sri Ranjani, he expresses his conception of good composition and correct rendering of kritis. Further, Tyagaraja was a 'sadhaka' and a great 'Bhakta'.

*from every word.*  
I have already stated that Tyagaraja's great contribution was that he rescued the musical form from the thralldom of sahitya and ~~that he~~ created a charming melodic structure in which the raga bhava was fully expressed through the instrument of sangathis. In doing so he achieved something marvellous - his greatest achievement - the perfect fusion of the raga bhava with the sahitya bhava, sound echoing sense. The commingling of sahitya and sangita is so perfect that it is impossible to

7.....



set the sahitya to music in any other way. The secret of Tyagaraja's craft lies in the complete integration of Bhava (feeling), Raga (melodic form) and Tala (rhythm). It may incidentally be remarked that Tyagaraja employed simple talas - Adi tala mostly - and never allowed the rhythm to dominate the melody.

Tyagaraja's songs have a great human interest and value. A careful study reveals the salient features of his simple life - his sole preoccupation in worshipping Rama, his voluntary poverty and renunciation of wants, the consequential misunderstanding with his elder brother, the criticism of and ridicule for, his ways of life and devotion and for his deliberate refusal of the invitation and patronage of King Sarabhoja of Tanjore, his 'uncha vritti' in going round the streets of Tiruvaiyar for alms, singing the praise of Sri Rama as a 'haridasa', and his pilgrimage to a number of sacred shrines. Being highly emotional by nature, Tyagaraja seeks relief in humbly representing his troubles, trials and tribulations to Sri Rama. 'Nadupai palikeru narulu' in Madhyamavati is a typical example of such an appeal. The psychological basis of the conduct of his life is clearly brought out in this song.



We get an idea of his sadhana by the adoption of the different forms of Bhakti (sravanam, smaranam, pada sevanam, archanam, dasnam and atma nivedanam) in his kritis like 'Rama katha sudha', 'Smarane sukham', 'Nee pada pankajamula', 'Upacharamulanu', 'Bantu riti' and 'Naa jivaa dhara'. To crown all, his experience of becoming one with Rama - 'advaita siddhi' - is expressed in the kriti 'Intakante ananda memi'. -

I will now illustrate a few outstanding features of Tyagaraja's art and science, taking first his Alapana Paddhati or raga elaboration. A few kritis in Kharaharapriya will be examined.

In 'Pakkala nilabadi' the pallavi starts with pa in the middle octave and goes up to ga in the higher octave and comes down to the adhara shadja sa in the middle octave, the range being pa, ga, sa. The first swara pa is a 'swarakshara', the same as the first letter in the sahitya 'pakkala', that is, the syllable of the lyric and the note are the same. The anupallavi begins with tara shadja sa half an octave higher than the start in the pallavi in accordance with the tradition of 'vadi' and 'samvadi'. This start high up



in pitch serves also another purpose of echoing the sense in the sahitya where the anupallavi starts with the word 'chukkala' (stars) which are high up in the sky. Further, when 'chukkala rava' - king among stars, the moon - is mentioned the swara rises further to ma to indicate the exalted status. The range of sanchara here is sa, ma, sa. In the charana the raga sanchara is pa ma ni, going down to the lower octave. The raga sahchara is thus shown in three stages,  
pa ga sa; sa ma sa; pa ma ni,  
the total range being one and a half octaves, ni to ma.

9.....



The composition, 'chakkani raja margamulundaga' starts with ri in the middle octave, goes down to dha in the lower octave and then rises to ga in the higher octave and returns to the middle sa. This is one of the most wonderful kritis of Tyagaraja. There are as many as fifteen sangathis in the pallavi alone. The raga is elaborated in all the possible ways and is graded and phrased to suit the various moods and emotions expressed. Tyagaraja addresses his mind and questions why it tries to enter (dura) narrow and crooked lanes (sandula) leaving out the 'raja margamulu' the right royal roads that are available. In so doing, he uses lower notes in mentioning narrow lanes and when he exalts the royal roads the swara is raised to ga. Again, when he vehemently admonishes his mind for entering (dura nela) crooked lanes, the swara is raised to ga, the highest note employed. Further, the grandeur and beauty of the high ways 'chakkani rajamargamulu' are clearly brought out in the slow and deliberate tempo in which the kriti is set. It is impossible to describe the brilliance of the art employed, in words; it can only be experienced.



In 'Rama nee yeda', where Tyagaraja expresses his deep sorrow for those who are unable to experience the joy in uttering Rama Nama, the kriti starts in the lower octave to express the depressed feeling. Tyagaraja starts a kriti from a particular 'swara sthana' and uses selected music-phrases and graces to suit the bhava and rasa. The dependence of the evocative power of the phrase on its note-structure can be a fascinating study but it can fill up pages by itself. It is this insight that has enabled Tyagaraja to give variety to his Todi compositions, in spite of the fact that he composed the greatest number of his Kritis in this Raga. Only a few



instances can be given here. In 'Varidhi', a sense of prostration is brought out by the starting musical phrase 'dha nee saa'. Entreaty is the mood suggested by the opening phrase 'saa ree gaa ma' of 'Aragimpave'. Compassion is the note struck by the phrase 'saa ree saa nee dha nee' in 'Endu daginado'. Tyagaraja can draw pointed attention by a phrase 'saa saa saa nee dhaa dhaa' as in 'Tappi bratuka', bring out dissatisfaction in the phrase 'pa pa da ni pa daa pa' of 'Dachuko valena' or incarnate the <sup>re</sup>cessitude of self-realisation in the steady 'dhaa' of 'Koti nadulu'.

The Kriti 'Prarabha mitlundaga' is in the raga Swaravali created by Tyagaraja under the Harikambhoji mela. The name of the raga indicates a heterogeneous group of swaras - Swaravali - and sounds like or suggests janavali, a medley of persons. The swara sanchara of the raga is 'vakra'. The sahitya describes the crooked (vakra) behaviour of the people around - janavali - and the tala is jampe, a vakra tala, consisting of the smallest and odd number of five matras. Tyagaraja complains to Rama that he gets back evil for the good he intends. Thus the character of the raga, the bhava of the sahitya, and the nature of the tala blend into one another and give a perfectly integrated picture and the effect is reinforced by the quick tempo employed. The following music phrases are typical: Saa ma ga ma, sa ma gaa ma, paa ni da ni, nee ni da ni, pa pa ni da ni, sa sa ni da ni, da ma pa ni da.



Apart from all this, Tyagaraja has given us many compositions which are of great help in learning to distinguish between ragas with nearly the same swara krama. Jaganmohini and Gowla form such a pair. The jiva swara (note with the distinctive emphasis) is ga for the former and ri for the latter. In order to draw pointed attention to this, the kriti 'Sobhillu Sapta Swara' starts with the jiva swara ga. Likewise, in the kriti 'Nee bhajana gaana rasikula' the nee and gaa are swaraksharas. That is, they both form part of the lyrical text and also stand for the notes. In this song, the two syllables have been given

12.....



'Vina nasa geni yunnanura' - "I am anxious to hear from you directly how you are defeated by Sita in the game Omanaguntalu (an indoor pastime)". This Kriti is composed in the raga Pratapa Varali. Pratapa is valour and Tyagaraja humorously refers to the discomfiture of Rama as his pratapa.

Grahabheda or Srutibheda is the model <sup>a</sup> shift of ~~the~~ tonic. This is a difficult feat in the science of music and can be accomplished only by an expert. This intricate point of music is very ingeniously illustrated in the Kriti 'Mariyada gadayya' - "It is not fair on your part" - in the raga Bhairavam of the 17th mela. When the first line of the charana 'Tanavaru anyulane taratamyamu' - "the distinction shown between our own men and strangers" - is sung we will be struck with the change in the raga kala to Yaman Kalyani. This is produced by the shift of ~~the~~ tonic, sa to ma. <sup>(x)</sup> The distinction (taratamy) between our own (tana) raga, Bhairavam, in Carnatic music and the Hindustani (anya) raga, Yaman Kalyani, is thus illustrated by Grahabheda. This distinction (bheda) is brought in to correspond to the context in the lyric in the first line of the charana where Tyagaraja fondly accuses Sri Rama for his partiality towards his own men as against strangers.



of the incident, its relation to the raga Charukesi  
 and the parallelism. The incident marks the first  
 and historic meeting of the Aryan Prince, Sri Rama  
 with Sugriva, the King of the southern race and the  
 first impact of the <sup>civilization</sup> and culture of the  
 north with those of the south. The notes of Charukesi  
 in the lower half (purvanga) of the scale are like  
 those of Sankarabharana, a typical Carnatic raga and  
 the notes of the upper half (uttaranga) are like those  
 of Todi, a typical Hindustani raga (Bhairava). Uttara,  
 upper or north Aryan culture and purva, lower or  
 southern Dravidian culture meet and blend into one  
 great culture. The uttaranga notes which are like  
 those of the Hindustani raga and the purvanga notes  
 which are like those of the Carnatic raga join together  
 and blend into one charming melody. Todi represents  
 northern music and Sri Rama is the protagonist of  
 the Aryan race, while Sankarabharana is a typical  
 southern raga and Hanuman is the best representative  
 of the Dravidian race. The notes of Sankarabharana  
 are of higher pitch - tivra - and Todi is composed of  
 Komala swaras. This suggests <sup>the</sup> contrast between the  
 vigour and ruggedness of the Vanara and the polish  
 and gentleness of the Aryan. These parallelisms are  
 ingeniously brought out in the text of the Kṛitī.  
 'Sankaramsa' suggests that Hanuman is an incarnation  
 of God Sankara and also that Charukesi has the 'amsa'  
 or likeness of Sankarabharana. Again 'Todu needa'  
 not only suggests that Tyagaraja is under the shelter  
 and protection of Rama but also that the raga  
 Charukesi is the shadow (needa) of Todi. Thus it is  
 clear that Tyagaraja chose the raga, Charukesi,  
 deliberately and profoundly justified the choice.



Sri Rama, and many others - Divyanamams - were composed for use in Bhajana Kutams. These two types were simple in style and were in popular rakti ragas. Tyagaraja was the author of a few musical plays: Nauka Charitra, a regular opera and Prahlada Bhakta Vijayam, a dance-drama of the Bhagavata Mela tradition. Tyagaraja not only respected and followed tradition in its various aspects but reformed and revolutionised musical composition and his contribution has been remarkable for its quality. He was a typical lyrical composer. Many of his Kritis were short and sweet expressions of the various moods of the poet-composer, each of them being a subjective outpouring of the heart dealing with a single emotion.

Tyagaraja revived neglected ragas like Kharahara-priya and Hari Kambhoji and composed several kritis, illustrating the unfathomed melodic sweetness and expounding all the intricate musical aspects of these and other well-known ragas. He composed most of his songs in the seven major ragas (mela kartas), Hari Kambhoji, Kharaharapriya, Dhira Sankarabharanam, Hanumathodi, Mayamalawagowla, Nata Bhairavi and Mecha Kalyani and in nearly 120 of their derivatives (Janya ragas). Tyagaraja's discriminating artistic genius employed only such ragas that had a distinct melodic individuality. Out of the 72 mela kartas of Venkatamakhi, he could select only 48 as music-worthy. And among these he concentrated his attention on only a few as mentioned above. He was not satisfied with singing old ragas. "The pleasure of singing the praise of Sri Rama in new ragas ("Vinta ragamula") is unparalleled"



Foot-note (1) The union of the vigorous masculine Sankarabharana with the female, feminine Todi, resulted in the birth of a melodious raga - Charukesi, a charming lady with a beautiful and flowing hair.

⑧ \*Note on Grahabhedha.

Ma, pa, dha, ni, sa of Bhairava<sup>m</sup> is changed into Sa, ri, ga, ma, pa of Yamankalyani by shifting the tone of Bhairava from Sa to ma. This is explained below in terms of frequency intervals of the concerned notes.

Ma,	pa,	dha,	ni,	Sa	
$\frac{4}{3}$	$\frac{3}{2}$	$\frac{27}{16}$	$\frac{15}{8}$	2	Bhairav <sup>m</sup> .

To shift the tone Sa of Bhairava to Ma all the frequency ratios have to be multiplied by  $\frac{4}{3}$ . Frequency ratio of Ma and the ratios will be in order.

$$\frac{16}{9}, 2, \frac{9}{4}, \frac{5}{2}, \frac{8}{3}$$

For By reading reducing  $\frac{16}{9}$  to 4 we have to multiply

by  $\frac{9}{16}$  then the ratios will be 1,  $\frac{9}{8}$ ,  $\frac{1}{8}$ ,  
 da ni, nee ni da ni, pa pa ni da ni, sa sa ni da ni,  
 da ma pa ni da.

Tyagaraja dexterously employs musical notes to express the bhava in the sahitya. In 'Mee valla guna dosha memi, naa vallanegani' the pitch of the note in referring to Rama - Mee - is an octave higher than that used when he refers to himself - ~~naa~~<sup>naa</sup>, to indicate his littleness in comparison to Rama. In 'Tera deeyagarada, naa loni' in Gowlipantu, Tyagaraja prays to



talk to him but asked your brother to enquire. What is Tyagaraja to you?" Let us now consider the import of the incident, its relation to the raga Charukesi and the parallelism. The incident marks the first and historic meeting of the Aryan Prince, Sri Rama with Sugriva, the King of the southern race and the first impact of the civilization and culture of the north with those of the south. The notes of Charukesi in the lower half (purvanga) of the scale are like those of Sankarabharana, a typical Carnatic raga and the notes of the upper half (uttaranga) are like those of Todi, a typical Hindustani raga (Bhairava). Uttara, upper or north Aryan culture and purva, lower or southern Dravidian culture meet and blend into one great culture. The uttaranga notes which are like those of the Hindustani raga and the purvanga notes which are like those of the Carnatic raga join together and blend into one charming melody. Todi represents northern music and Sri Rama is the protagonist of the Aryan race, while Sankarabharana is a typical southern raga and Hanuman is the best representative of the Dravidian race. The notes of Sankarabharana are of higher pitch + tivra - and Todi is composed of



... against strangers.

In the Kriti 'Ada modi galede' in Charukesi (26th Mela) Tyagaraja describes the incident where Hanuman meets Sri Rama for the first time, as the ambassador of Sugriva, on the Rushyamuka hill. He says: "When I fall at your feet in great devotion, considering you as my only hope and protection, why are you reticent? Well, I understand it; when the learned and considerate Hanuman, the son of the Lord of Wind and an incarnation of Sankara, bowed before you in all respect, you did not condescend to

⊗ *Refer to note at the end*

14....

- 15 -

He proceeds further to keep up the parallelism. While referring to Hanuman as 'Sankaramsudai' and 'Asuga Sambhavudu mrokka', the music is composed to confine to the notes of Sankarabharana, whereas when Rama "Todu neda neive" and to the reference is to Lakshmana - 'Kadalu tammudu' the music is set in the higher notes. Further, to indicate the fruitful results of the intimate friendship of the two races and the perfect blending of the two systems of music and the consequent emergence of a highly enriched culture and a melodious raga, Tyagaraja starts the music of the Kriti thus,

- Paa dha paa ma *ga* ri ga saa ri ga ma pa ma -

- A da mo di ga la de Ra ma yya ma ta -

at the point of the junction of the two tetra chords (sa ri ga ma and pa dha ni sa) and presents a unified melody of unmistakable individuality. Charukesi is not a mixture of two ragas, Sankarabharana and Todi, in the hands of Tyagaraja but a beautiful raga with a character of its own. ⊗ \*



## 5.11 Looking Back on Educational Field: Then and Now [From Archana - 1984]

### Looking Back\* On Educational Field

—Prof. Vissa Appa Rao.

It is twelve years since I retired from active educational life. Many changes had come over the educational field, and still we often hear of the need for complete reorganization of the educational system, of the fall in standards and of the deterioration in discipline.

I am glad I have this opportunity of recounting to you some of my experiences which might amuse you and perhaps also indicate how the present situation had evolved.

Sixty years ago there were few educational facilities. We had to leave the native town or village to a far off high school. All non-language subjects were taught in English from the first form upwards. Standard tex-books were prescribed and were not generally changed year after year. The texts were learnt by heart and were reproduced nearly verbatim. The instruction and method of teaching was rigid and authoritative. Individual attention was paid to the student. There was not much scope nor encouragement for extra curricular activities. The main concern was to pass the Matriculation examination and start life on Rs. 15/- per month.

After such a high school course I joined Government Arts College, Rajahmundry. The Principal was invariably a Britisher belonging to the Indian Educational Service. He was looked upon with awe and respect by the students, and their guardians, and the Lecturers of the College.

Though English and Telugu were given equal status so far as the curricula of studies went, the emphasis was on English. One of the ambitions of the under-graduate was to shape as an eloquent speaker in English. Public speeches were always in English and it was infra dig to express ourselves in Telugu.

Science subjects like Physics and Chemistry were taught only in the B.A. class. The standards were low, lecture demonstrations were few and far between. Students were not allowed to handle apparatus nor do experimental work. Teaching was vague and theoretical and the practical learning of the subjects was generally unknown.

But it was a great pleasure and privilege to study under and be in close contact with inspiring scholars of outstanding ability and culture like Profs. Mark

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\*Radio Talk on 3-8-1953.



## రసవిద్య వెలయించిన సిద్ధనాగార్జునుడు

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ఆచార్య విస్సా ఆప్పారావు

నేడు రసాయనశాస్త్రమని వాడుకలోనున్న శాస్త్రమునకు యీ రసవిద్యయే మూలము. అతి ప్రాచీన కాలము నుండి ఈ రసవిద్య మన దేశమందు ప్రబలియుండెను. ఈ విద్య శ్రీ రామచంద్రులవారు దండకారణ్యమందుండినప్పుడు కాలనాథుడను ఋషిరద్ద నేర్చుకొని రామరాజీయము, రసేంద్రమను రెండు గ్రంథములు రచించిరని యీ విద్యలో ఉత్తీర్ణులైన సిద్ధులు సంప్రదాయకముగ చెప్పుకొనెడి విషయము. ఈ రెండు పుస్తకముల యొక్క శిథిల ఖండములు నేడున్నవి. “అర్కప్రకాశ” మను చిన్న గ్రంథమును రావణుడు వ్రాసెనని ప్రసిద్ధి. అనేక వ్యాధుల కిందు చికిత్స చెప్పబడినది. రసాయనములతో వైద్యము చెప్పబడినది. ఒక ఖనిజ ఆమ్లమును (Mineral acid) తయారుచేసి వాడినట్లున్నది. క్రీస్తుకు పూర్వము అయిదవ శతాబ్దివాడగు పతంజలి మహర్షి ‘లోహ శాస్త్రము’ను రచించెను. హిరోడోటస్ హిందూ దేశము నందలి యోగులు పాదరసముతో చేసిన మందులను తిని వందల కొలది ఏండ్లు జీవించి యుందురని వ్రాసియున్నాడు. మాథ్యమిక బౌద్ధ ప్రవర్తకుడగు ఆచార్య నాగార్జునుడు కొన్ని వందల ఏండ్లు జీవించెనని, రససిద్ధి పొందినవాడని చెప్పబడుచున్నది. క్రీస్తు తరువాత ఏడవ శతాబ్దిలో ప్రసిద్ధి గాంచిన సిద్ధనాగార్జునుడు ‘రసవైశేషిక’ మను గ్రంథమునకు కర్త. గొప్ప రసవిద్యాప్రపీఠుడు. రెండవ శతాబ్దియందు వెలసిన ఆచార్య నాగార్జునుడు రసవిద్య యందు పేరు పొందిన గొప్ప సిద్ధుడనీ, రసవిద్యకు ప్రథమాచార్యుడనీ, రసవాద శాస్త్రమును కల్పించినవాడనీ చెప్పదురు. చైనా దేశమందలి రస వైద్యము హిందూ దేశము నుండి గ్రహించినట్లు కనిపించును “స్కామ్” లోని ముప్పది నాల్గవ పుస్తకములో (క్రీ.శ. 589-618) నాగార్జునుడు “లూంగ్ షా” అని చెప్పబడినాడు (“లూంగ్” అనగా నాగము-పాము; “షా” అనగా చెట్టు-అడ్డున వృక్షము). అం దీ లూంగ్ షా అనేక ఔషధయోగములకు కర్తయని యున్నది.

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131



## ప్రాచీనాంధ్రమున వైద్యము

మన పూర్వులు వైద్యమును నాలుగు విధములుగా చెప్పిరి. ఒకటి రసమును, ఇతర లోహములను ఉపయోగించునది; రెండవది మూలికా వైద్యము; మూడవది మంత్రములను, రక్షలను ఉపయోగించునది; నాల్గవది శస్త్రవైద్యము. మొదటి రసవిద్య దివ్యమైనదనీ, యోగులచే అభ్యసింపబడినదనీ; రెండవది, మూడవది మనుష్య సంబంధమైనవనీ; నాల్గవది క్రూరమైనదనీ వారి మతము.

రసవిద్య ప్రయోగము చేత కనుగొన్నదిగా గాక మనుష్య ప్రజకు మీరినదై ఈశ్వర, ప్రేరితమై వెల్లడి చేయబడినట్లు తోచును. ఈ విద్యా రహస్యము చాలావరకు మాటుపడినది. రహస్యముగా యోగులచేత నభ్యసింపబడినట్లు కన్పించును.

రస విద్యను గురించిన గ్రంథములు పెక్కు లక్కడక్కడ చెదిరియున్న వానిని సేకరించి అందలి వివిధ విషయములను అనుపూర్వికముగా సక్రమముగా విభజించి, సందర్భములను, తప్పలను సరిదిద్ది, సంపుటికరించి 'రస జలనిధి' యను గ్రంథమును రసాచార్య కవిరాజు భూదేవముఖర్జీ, (బెంగాలు ఆయుర్వేద విద్యాలయములోని ప్రధానాచార్యుడు) 1926 లో మొదటి సంపుటమును ప్రచురించెను. ఈ సంపుటమందు ఒక పాదరసమునకు ఎట్లు వివిధ సంస్కారములను చేసి దానిని సేవించవలెనో, ముఖ్యముగా వజ్రకాయమును పొంది ముసలితనమును మృత్యువును ఎట్లు ప్రతిఘటించనగునో, రసమును భస్మము చేసి దానితో ఎట్లు రాగి మొదలైన లోహములను బంగారముగా, వెండిగా మార్చవచ్చునో స్పష్టముగా చెప్పబడినది.

## రసవిద్య

ఈ ముఖర్జీగారు ఒక యోగిని కలసికొనుట తటస్థించినదని, ఆయన దయవలన రసవాద గ్రంథము లందలి విషయములను సమన్వయించుకొని అర్థము చేసుకొను రహస్యమును తెలిసికొంటినని వ్రాసియున్నారు. ఆ యోగి నిత్యధర్మ జీవితమునకెంత కావలెనో అంతే బంగారము చేసికొనుచుండవలెనని చెప్పెనని, ముఖర్జీగారికి బంగారమును చేసి ప్రత్యక్షముగా చూపించెనని వ్రాసిరి. ఏ భస్మము నుపయోగించి బంగారమును చేసిరో దానిని చేయు విధమంతయు యీ గ్రంథమందు వివరించితిని, అందు వివరించిన రీతిని ఒక రసశాలను నిర్మించి, ఉపకరణములను, ధాతువులను, మూలికాదులను సేకరించి ఆ ప్రయోగములు చేయుటకు తగిన వసతులు కల్పింపబడినచో తానాపని యందు నిమగ్నుడై రససంస్కారములను చేసి ఫలితములను పొందగలనను ధైర్యము కలదని వ్రాసియున్నారు.

రసజలనిధి ప్రథమ సంపుటము నుండి రసవిద్యను గురించిన విషయములను యీ క్రింద సంగ్రహించుచున్నాను :

1. ఆచార్య లక్షణము :- రసకర్మదక్షుడు, సదయుడు, తంత్రజ్ఞుడు, తేజస్వి, జ్ఞాని, శివసాధకుడు, భక్తుడు, జితేంద్రియుడు, సర్వజీవరహితుడనై ఆచార్యుడు త్రమ పురుషుడుగా ఉండవలెను.
2. శిష్యులక్షణము :- నిరహంకారి, సత్యవాది, దృఢవ్రతుడు, మేధావియై యుండవలెను.



## రసజలనిధి విషయ వివరణము

3. రసశాలా నిర్మాణము :- దేవాలయముగల నగర మందు విభులము, రమ్యమునైన పన మందు, సర్వోషధులు గల చోట రసశాల నిర్మింపవలెను. బహుద్వార గవాక్షము లుండవలెను. నిర్మల నీరములు దగ్గరగల చోట, ప్రశాంతముగా, ఏకాంతముగా రసక్రియ సల్పుటకు వీలుగా శాలను నిర్మించవలెను. సూర్యరశ్మి బాగా తగులుచోట స్పటికమునంటి గాతితో తూర్పు భాగమున రసమంటపమును నిర్మించవలెను. సర్వరసములను (ధాతువులు) నిలువ చేయుటకై ఏర్పాటు చేయవలెను. మండప మధ్య మందు ఒక వేదికపై వనలింగమును ప్రతిష్ఠించి యథా శాస్త్రముగా నిత్యపూజ సలుపవలెను.

4. ఒకటిన్నర కొలముల (తులముల) బంగారు రేకులను, మూడు రెట్లు బరువుగల రసముతో ఒక రూముసేపు ఒకసారి ఆప్లురసముతో మర్చించి, నిమ్మకాయలో పొదిగి, గంజిలో డోలా యంత్రములో ఉడక బెట్టి వలెను. అట్లు తయారైన రసలింగమును ఉత్సాహముతో మంటప మధ్యమున ప్రతిష్ఠించి పూజించినచో అసామాన్య మగు ఫలము కలుగును. దర్శనము చేత పుణ్యము కలుగును. స్పర్శవలన ఫలసిద్ధి యగును, పూజించిన ముక్తి కలుగును.

తరువాత శ్రీదేవిని మంత్రరాజుమగు ఆఘోరమంత్రముతో పూజించవలెను. రసాంకుశ మంత్రముతో కూడ దేవి పూజ చేయవలెను.

5. రసశాలా వివరణము :- చహ్నికర్మ, వేషణకర్మ, శస్త్రకర్మ, వేధకర్మ మొదలైనవి నియ మితమగు దిక్కులలో ఏర్పరుపవలెను.

6. శాశోపకరణములు :- వివిధోపకరణములు, యంత్రములు, మూసలు, పుతములు, వాని వీవరణములు చెప్పబడినవి.

7. శిష్యోపనయనము చేయు విధము :- ఆచార్యుడు భార్యా సమేతుడై ఉపనయన కర్మసాగించ వలెనని, శిష్యుడు ఆఘోర, రసాంకుశ మంత్రములను లక్షసార్లు పునఃపఠన చేయవలెనని వివరింపబడినది.

రససిద్ధికి భగవత్కృప ముఖ్యము :- గురుని చేత ఉపనీతుడై రాజాదరణము ప్రజాదరణము కలిగి, ధనవంతుడై, రసోషధ కోవిదుడై నానాకర్మ పరాజ్ఞులుడైన వానికిగాని సిద్ధిలేదు.

రస మహిమ :- ముక్తి పొందుటకు ప్రాణాయామము, వాసనానోదనము, జితేంద్రియత్వము మార్గములు. ఇవి సుస్థిరమగు దేహమున గాని సాధ్యములు కావు.

రసము, గాలి యీ రెంటిచేత శరీరము స్థిరముగ నిలువ గలదు. మూర్చావస్థలో రసము వ్యాధులను పోగొట్టును. మృతరసము దేహరోగ్యమును కాపాడును. రసము వాయువు బంధింపబడినచో భేదరత్నమణ్వును. 'వద్యః భేదరతా మీదత్రై రసోవాయుశ్చనాన్యథా' ఇంకొక రీతిని సాధ్యము కాదు. పాదలేపనముతో నాకాశమున నెగురుట, నీటిమీద నడచుట దీనికి సంబంధించినవే! ఈ యాకాశ గమనమున కుపయోగించే రసము నల్లని రంగు గల రసేంద్రమను కృష్ణరసము.



## అచార్య విస్సా అప్పారావు

**రంజనమ్ :-** (పదిహేడవ సంస్కారము) తైలము మూలమున ఇతర పద్ధతులవలన రసమునకు ఎరుపురంగు వచ్చునట్లు చేయవచ్చును. అట్టి రసము కదలక నిలుచును. అగ్నిపైనుంచిన విరిగిపోదు. ఇట్టి రసముతో లోహములను కబళించునట్లు చేయవచ్చును.

## స్పర్శమణి (Philosopher's stone)

ఎరుపురంగు వచ్చిన రసమును మసి, ఇటుకపొడి, పెరుగు, సిద్ధండి, గంజిలో కలిపి వేడిచేసి ఊర్ధ్వ పతనము (Sublimation) కావింపవలెను. రసములో  $\frac{1}{64}$  బరువు గల బంగారుముద్దనుగాని, వెండిముద్దను గాని రసము మ్రింగునట్లు చేయవలెను. ఇట్లు నాలుగుసార్లు చేయవలెను. అది నాలుగు మడతలు గల గుడ్డలోనుండి దిగినచో రసము ఆ ముద్దలను పూర్తిగా జీర్ణించుకొన్నట్లు కావింపవలెను. ఈ రసమున కింకను అనేక కర్మలు చెప్పబడినవి. జలకచ్ఛప, స్థలకచ్ఛప యంత్రములు మొదలగు సాధనలతో మూడేసిరోజులు రసముకంటె ఎనిమిదిరెట్లు బరువైన బంగారమునుగాని, వెండిగాని ఉపయోగించి కర్మ సాగించవలెను. అట్లు తయారైన రసమును దివ్యోషధములతో ఘనీభవింపజేసినచో, అది ఇష్టసిద్ధులను చేకూర్చునదగును.

ఉపయోగించిన బంగారుగాని, వెండిగాని రసముతో సమానభాగమైనచో తయారైన రసమును శతభేది యందురు. అది నూరురెట్లు బరువైన లోహమును బంగారముగాగాని, వెండిగాగాని చేయును. రెట్టింపు బంగారమును వెండిగాని ఉపయోగించినచో సహస్రభేది, నాలురెట్లకు లక్షభేది, ఎనిమిది రెట్లకు కోటిభేది యగును. పదహారుగాని, ముప్పదిరెండు రెట్లుగాని బంగారము నుపయోగించినచో స్పర్శమణిగా రసము మారును. స్పర్శమాత్రమున లోహములు బంగారుగా మారును. ఇట్లే వెండిగా కూడ మారును.

**వేధన భేదములు :-** లోహములను బంగారముగా మార్చుటలో భేదములు కలవు.

**లేప వేధనం :-** ఇది సాధారణ పుత సాధనద్వారా జరుగును.

**జేపవేధనం :-** లోహమును కరిగించి అందులో రసమును పడవేయుటచేత నగును.

**కుంతవేధనం :-** తయారైన రసములో చిన్నభాగమును పట్టుకారుతో పట్టుపట్టి లోహము కరుగుచుండగా దానిపై నుంచుట.

**ధూమవేధనం :-** లోహము నగ్నిపైనిడి, తయారుచేసిన రసమును జల్లగా పొగజిమ్మిన తత్క్షణమే లోహము బంగారుగా మారును.

**శబ్దవేధనం :-** తయారైన రసమును పుక్కిట నిడికొని చిన్నలోహపుముక్కమీద ఉప్మని ఉడి వెచ్చబెట్టినచో, బుస్సుమను శబ్దముతో లోహము బంగారముగా మారును.

**స్పర్శవేధనము :-** స్పర్శమణితో అంటుటచేత బంగారుగా మారుట (1౪, ౩2 రెట్లు బరువుగల లోహములు, నవరత్నములు మొదలగు బీజములతో ఘనీభవించిన రసముతో అంటవలెను).



వేధనమొనర్చబడిన లోహములను ఒక పక్షము (పద్నాలు దినాలు) భూమిలో పాతిపెట్టి తరువాత తీసి విక్రయించవలెను. ఇట్టి వేధనవిద్య నేర్చినవానిని దుఃఖతరన్ అందురు. (ఇతడు దుఃఖములను తరింపజేయ గలుగును గాన!)

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కేవలము రసమును మాత్రమేగాక, రసము గంధకమును కలిపి ఉపయోగించి తగరమును వెండిగా మార్చుట, హరితాశమును మాత్ర ముపయోగించి రాగిరేకును బంగారముగా మార్చుటకూడ రసజలనిధి రెండవ సంపుటములో వివరింపబడినది. హరితాశమును శతభేదిగా మార్చునట్టి యోగముకూడ నందు వర్ణించబడినది.

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**తీక్షణ లోహము :-** (Steel) రసజలనిధి యొక్క ఆరు విధములైన ఉక్కులు నాల్గవ సంపుటములో వివరింపబడినవి.

1. ఖర :- లోహముపైన పోగర లేకుండును—విరుగగొట్టినచోట పాదరసమువలె మెఱయును.

2. సారలోహము :- పై భాగమున పోగరలుండును. పుల్లటి శాకరసముతో తోమినచో పైభాగము పర్వతశిఖరాకారము గల సన్నని గీతలతో గూడిన ఆకారములు గోచరింతును.

3. హిన్నల లోహము :- నలుపు పసుపు కలిసిన రంగు కలది. దీని పైభాగమున పోగర పక్షి ముక్కుల ఆకారము కలదిగా ఉండును.

## లోహ పరిశీలన

4. తరపట్ట లోహము :- లోహ పరిశ్రమలో మేలితరహాకి చెందినవారు మాత్రమే దీనిని తయారు చేయగలరు. ఇది నున్నగాను, నల్లగానూ, మెరయుచుండును. అతి సన్నని పోగరకలదై యుండును. చిన్న చిన్న దొప్పల ఆకారము కలదిగా దీని తయారీ ఉండును. ఇది తుప్పు పట్టదు (does not rust). ఎండ, వాన, గాలి ఎన్నాళ్లు సోకినా తుప్పు పట్టదు. దీనితోనే బహుళః ఢిల్లీలోనున్న సుప్రసిద్ధ పురాతన లోహస్తంభము చేయబడి యుండును. కోనార్కలోని సూర్యాలయమందలి లోహస్తంభములు, విష్ణుపూర్లోని ఫిరంగులు యీ ఉక్కుతోనే చేసియుండవచ్చును. ఇట్టి ఉక్కును చేయగలిగిన కార్మికులు 1880 ప్రాంతములవరకూ నుండిరి. నేడు ఎచ్చటను యీ విద్య నేర్చినవారు కానరాదు !

5. వజ్రలోహము:- దీని పైభాగమునగల పోగర రేఖలు మెరుపు వజ్రతీగలవలె లోతుగాను, నిడివిగాను, వంకరగాను ఉండును. ఇది మెరయునట్టి నలుపు రంగుగా ఉండును.

6. కాలలోహము:- చాలా బరువుగా (blue-black) చక్కని నీలవర్ణము కలదై యుండును. పై భాగము మెఱయుచుండును. గాఢవలె ప్రతిఫలించును. ఇంకొక లోహపు ముక్కతో ఎంత కొట్టినను ఇది బద్దలు కాదు.



## ఆచార్య విస్సా అప్పారావు

ఈ వివరములవలన లోహ పరిశ్రమలోను, ధాతుకర్మయందును మన పూర్వులు చాల తెలిసినవారని చెప్పవచ్చును. ఇట్టి విద్యలు మరుగుపడి యున్నవి. 1925 నవంబరు నాల్గవ తేదీన ఫార్వర్డ్ (Forward) అను కలకత్తాలోని పత్రిక ప్రారంభించినది:- బంగారు చేయు యోగములు, ఖనిజములను కనిపెట్టు యంత్రములు (Prospecting Devices), రాయలసీమలోనుండి సేకరించిన కొన్ని అపూర్వమగు రసవాదగ్రంథములు శ్రీ గొల్లాపిన్ని వాసుదేవశాస్త్రిగారు ఈమధ్యనే తెచ్చి నా కిచ్చిరి. వాని గురించిన పరిశోధన త్వరలోనే సాగగలదని తలచుచున్నాను.

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## నవనాథ చరిత్ర - నాగార్జునుడు

గౌరవ రచించిన నవనాథ చరిత్రలో నాగార్జును డను సిద్ధుని పూర్వగాథ యొకటి కలదు. అతడొక రాజపుత్రుడు. వేటకు బోయి విధివశమున పామై యుండునట్లు శపింపబడి, అర్జునవృక్షములోని తొర్రలో పాము రూపమున దాగియుండి, మీననాథసిద్ధుని యనుగ్రహమున మానవాకృతిని బొంది, అతనికి శిష్యుడై నాగార్జునుడను పేరుగాంచెను. అణిమాదిసిద్ధులన్నియు మీననాథు డీతని కనుగ్రహించెను. తరువాత ఆత్రేయుడను శిష్యునకు రసవాద సార శాస్త్రములను తెలిపి, యాంధ్ర దేశమున తిరుగుమని వంపి, తాను మీననాథుని వద్దకు బోయి అతనిని సేవించుచుండెను. నాగార్జునుని శిష్యుడు శ్రీశైలమును చేరి, గర్వితుడై శ్రీశైలమునంతను బంగారుకొండగా మార్చదలచి కార్యమునకు పూనెను. అది తెలిసి విష్ణువు మాయా వేషమున వచ్చి అతని పుక్కిటనున్న మృత సంజీవనీ ఘటికను పైకి తీయించి, చక్రప్రయోగము చేసి వధించెను. ఆ ఘటిక నోటనుండగా కత్తితో మెడ మీద కొట్టినను ఖంగుమని తూలిపోయినదిగాని వ్రేటు పడలేదు. కొండనంతను బంగారము చేసిన ప్రజలు ఎవరికి కావలసినది వారు త్రవ్వుకొనిపోయి సేనల పోగుచేసికొందురనియు, దేశమునందంతటను ఆరాజకము ప్రబలు ననియు, ధర్మము తొలగుననియు, మర్యాద నిర్మూలమగుననియు, భూమి నెఱి తప్పననియు తలచి విష్ణుమూర్తి లోకహితము కొఱకై అతనిని సంహరించెనని కథ.

ఈ సందర్భములో బంగారు చేయు విధానము కొంత వర్ణింపబడినది. దాని నీ క్రింద ఉదహరించుచున్నాను:-

రసము లైదును నుప - రసము లెన్నిదియు  
బసరులు మందులు - బాషాణములును  
గలువంబులును జాల - గా సమకూర్చి  
వలయు మంత్రోషధా - వళులకు బలియు  
జేసి మనోజయ - సిద్ధి బెంపొంది  
యాసీనుడై లులా - యాజిన రచిత

౧౩౬

137



గురుభక్తికల నిర్వ - గ్రోవులు సలిపి  
 సరములు బొందుగా - సంధించి భక్తి  
 గురునాథు దలచి త - ధురువు భజించి  
 వరభైషజాది దై - వములను మ్రొక్కి  
 నేర్చిన మందు ల - న్నియు వైచి యగ్ని  
 గూర్చి పుటంబు గ్ర - క్కున బెట్టనపుడు  
 వెసనూడువారును - విసువక రసము  
 పసరులు గలిపి పా - ల్పడ నూరువార  
 లనువొందగా మూస లమరించువారు,  
 మొనసికమ్మట బుటం - బులు బెట్టువారు  
 కలయంగ నూరిన - కనకంబు దివిసి  
 యెలమిమై బెనుబోవు - లీడ్చెడివారు  
 నైసంభ్రమింపుచు.....

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### నాగార్జునకొండలో లభించిన రసాయనిక సాధనములు

1953 లో ఆంధ్ర విశ్వవిద్యాలయ రజతోత్సవ సందర్భమున జరిపిన చారిత్రక ప్రదర్శనములో, నాగార్జునుని కొండపద్ద జరుపుచున్న త్రవ్వకములలో లభించిన వస్తువులను కొన్నిటిని తెచ్చి చూపిరి. అందు పెద్ద పింగాణీ కుప్పెలు (blacks), బక యంత్రములు (Retorts) కలవు. పింగాణీకుప్పెలో రాయివలె గట్టిపడి పోయిన పదార్థము మెండుగా నుండెను. అందొక గరిటకూడ బిగుసుకొనిపోయి యుండెను. ఈ రసాయనిక సాధనములవలన నాగార్జునునికొండ ప్రాంతమున రసశాస్త్రవేత్తలు, రససిద్ధులు కొందరు స్థావరము కల్పించుకొని యుండి యుందురని చెప్పవచ్చును. ఇవి ఏ కాలమునాటివో చెప్పజాలము. ఇవి సిద్ధనాగార్జునాచార్యుని కాలము నకు తరువాతివి మాత్రమేయుండవు. ఏమన, నాటికి నాగార్జునునికొండ ప్రాముఖ్యము తగ్గిపోయెను. ఈ పింగాణీ కుప్పెలలోని పదార్థమును దొలిచితిసి (drill) రసాయనశాస్త్రపద్ధతి నడియెట్టిదో తెలిసికొనుట చాలా అవసరము.

శివ

౧౪౦

138



